

ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 8, NO. 6



JUNE, 1951

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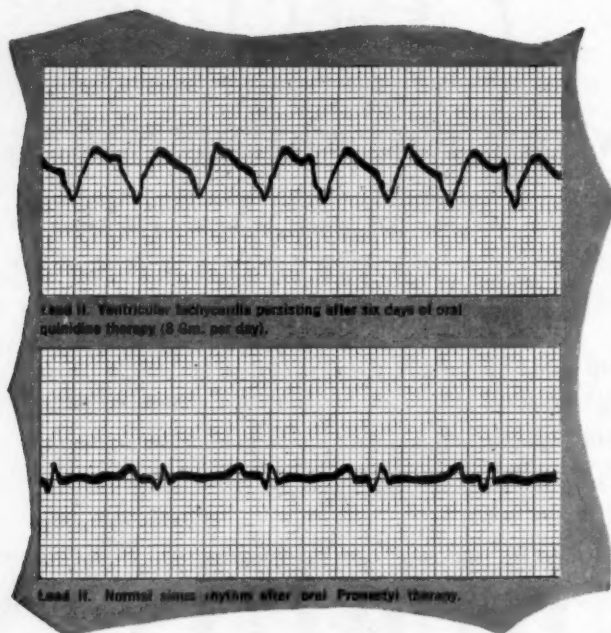


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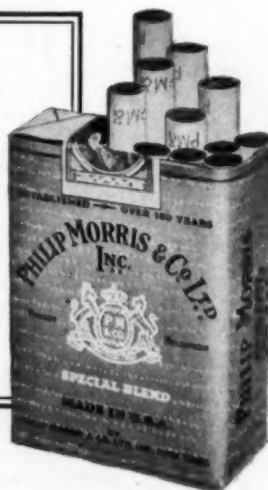
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FACTUAL
REPORT
ON**

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(CYCLAMATE, ABBOTT)

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HOW SUPPLIED: Now in calcium as well as sodium forms. Handy-to-carry SUCARYL Sodium tablets, eighth-gram, effervescent, grooved, in bottles of 100 and 1000; SUCARYL Sodium Sweetening Solution, liquid form convenient for household use, in 4-fluidounce bottles; and SUCARYL Calcium Sweetening Solution, newly developed non-sodium form for low-salt diets, in 4-fluidounce bottles.

RECOMMENDED USAGE: Recommended daily limit for adults, 12 tablets or about 1½ teaspoonfuls of solution. Since the tablets contain sodium bicarbonate as a disintegrator, somewhat lower sodium diets are possible with the sodium solution than with the tablets. Sodium content per tablet is 21.64 mg., while an equivalent amount of sodium solution contains 14.25 mg.

Patients on strict low-salt diets, however, should use the calcium solution. The calcium form has a lower bitter taste threshold, noticeable in some foods when the proportion reaches 0.5 percent, compared to about 0.8 percent for the sodium form. Both forms are equally good in ordinary use.

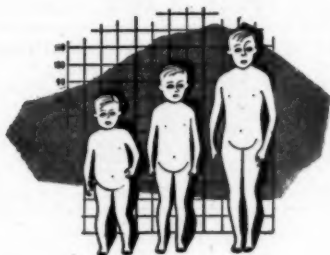
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Meat . . . in the Low-Sodium Diet

Clinical experience^{1,2} and investigative data³ indicate that the liberal use of meat may not be contraindicated when sodium intake must be restricted. Because unsalted meat contains only relatively small amounts of sodium, while contributing importantly to other nutrient needs, meat deserves special consideration in very-low-sodium diets, in sodium-poor diets, and in no-extra-sodium diets.

Table I lists the amounts of sodium³ in three kinds of meat. Table II gives the estimated amounts of sodium in hospital diets planned for cardiorenal vascular patients.⁴

SODIUM IN MEAT³

	Sodium Provided by 60 Gm. Serving	Sodium Provided by 100 Gm.
Beef, without bone	32 mg.	53 mg.
Lamb, without fat	66 mg.	110 mg.
Pork, without fat	35 mg.	58 mg.

Table I

SODIUM IN HOSPITAL DIETS⁴

Sodium-Poor Diets*				Very-Low-Sodium Diet†
40 Gm. Protein	70 Gm. Protein	100 Gm. Protein	130 Gm. Protein	70 Gm. Protein
400 mg. Na	500 mg. Na	800 mg. Na	1,000 mg. Na	200 mg. Na

Table II

*Foods prepared and served without salt.

†Weighed diet. May contain 4 oz. of unsalted meat.

(Normal diets contain approximately 4 Gm. of sodium daily.)

Hence, the data here shown indicate that relatively generous amounts of meat may be included in low-sodium diets.

Meat serves well in the therapeutic objective of maintaining a high state of nutrition in patients with congestive heart failure or nephritic edema by providing valuable amounts of biologically complete protein and of B complex vitamins, including the recently discovered B₁₂.

1. Wheeler, E. O.; Bridges, W. C., and White, P. D.: Diet Low in Salt (Sodium) in Congestive Heart Failure, *J.A.M.A.* 133:16 (Jan. 4) 1947.

2. Wohl, M. G., and Schneberg, N. G.: Dietotherapy (Cardiovascular Disease), in Jolliffe, N.; Tisdall, F. F., and Cannon, P. R.: Clinical Nutrition, New York, Paul B. Hoeber, Inc., 1950, chap. 27.

3. Bills, C. E.; McDonald, T. C.; Niedermeier, W., and Schwartz, M. C.: Survey of the Sodium and Potassium Content of Foods and Waters by the Flame Photometer, *Fed. Proc.* 6:402 (Mar.) 1947.

4. Mayo Clinic Diet Manual, Philadelphia, W. B. Saunders Company, 1949, p. 113.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.



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A Preferred Nasal Decongestant and Vasoconstrictor

Otorhinolaryngologists frequently express preference for Neo-Synephrine hydrochloride to alleviate turgescence and nasal congestion in colds, sinusitis and various forms of rhinitis.

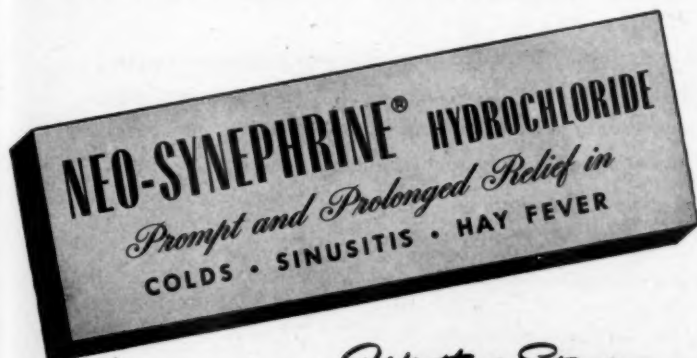
"When considerable nasal obstruction exists, relief may be obtained by the instillation of some shrinking agent into the nose... as for example Neo-Synephrine hydrochloride ($\frac{1}{4}\%$)"¹

A "desirable preparation of this type has been perfected in Neo-Synephrine hydrochloride. It may be used for local application in the nose in $\frac{1}{4}$ to 1% solution."²

Neo-Synephrine's "desired effect occurs within from two to fifteen minutes..."³

"Its action is sustained for two hours or more."³

Neo-Synephrine hydrochloride is notable for freedom from stinging and for effectiveness on repeated application. There are few complaints of after effects such as burning and nasal congestion... and little tendency to develop local sensitivity.¹



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1. Taft, L.: Clinical Allergy. Philadelphia, W. B. Saunders Co., 1947, pp. 333-336.

2. Hanzel, F. K.: Allergy of the Nose and Paranasal Sinuses. St. Louis, C. V. Mosby Co., 1936, p. 769.

3. Kelley, S. F.: Choice of Sympathomimetic Amines. Cornell Conferences on Therapy, II, 1947, p. 136.

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1. Douglas, R. G.; Ball, T. L., and Davis, I. F.:
California Med. 73:463 (Dec.) 1950.

2. Pratt, P. T.: Nebraska State M. J. 35:294 (Sept.) 1950.

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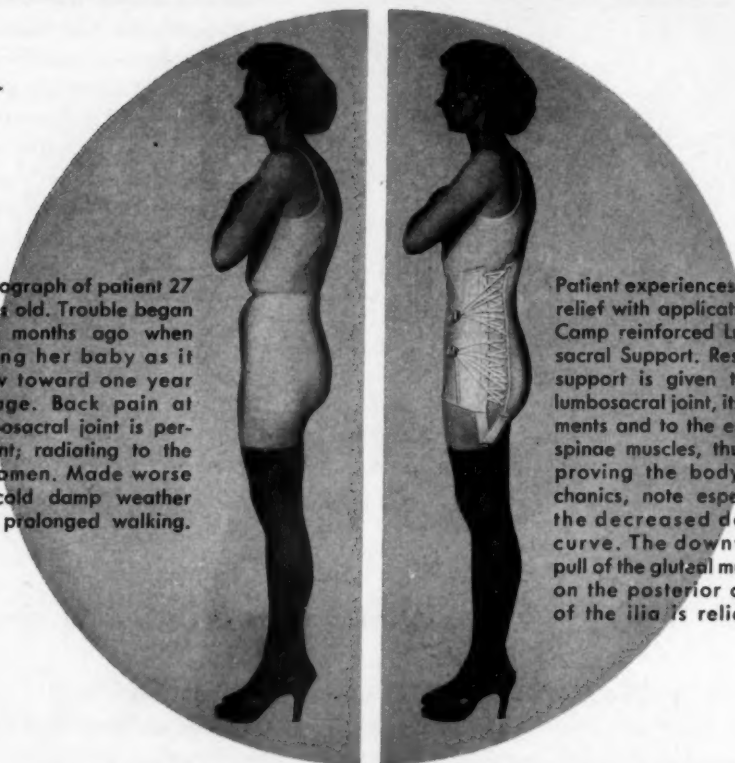
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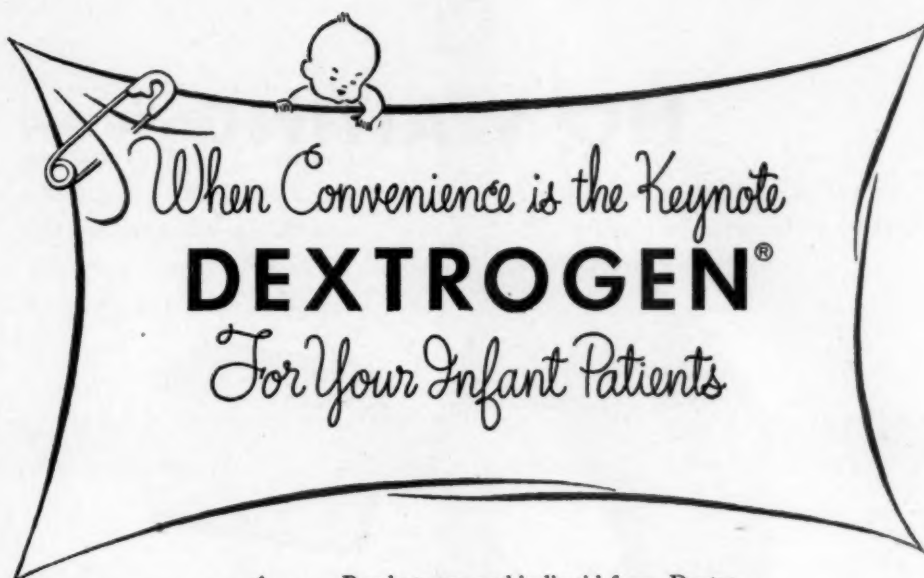
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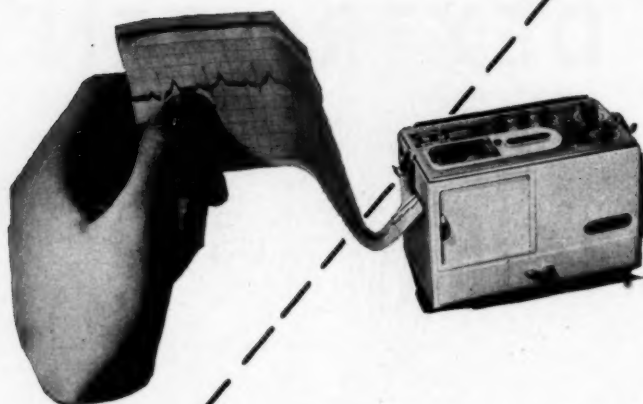
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All the mother need do is pour the contents of the Dextrogen can into a properly cleaned quart milk bottle, and fill with previously boiled water. Makes 32 oz. of formula, ready to feed.*

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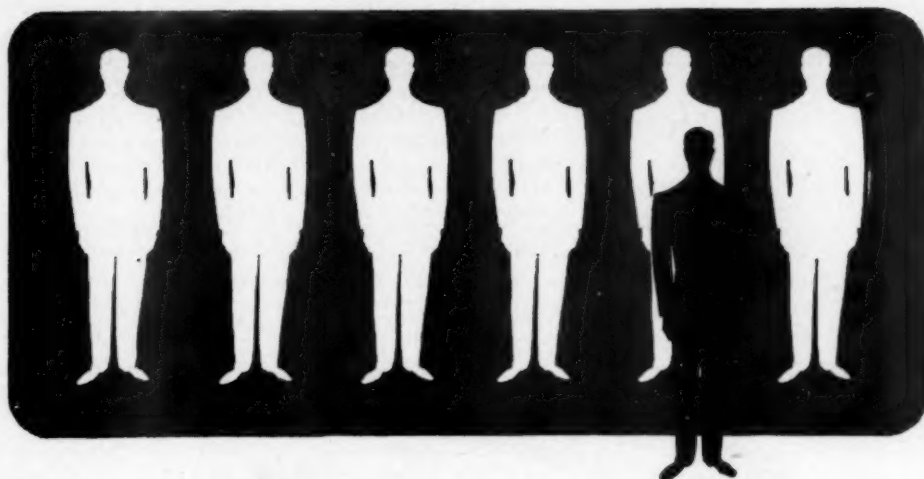
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TULAREMIA WITH REPORT OF SIX CASES

A. J. FILLMORE, M.D.
Mesa, Arizona

It is not the intension in this report to make a review of the problem of Tularemia but to call attention to the disease as it is found in Arizona, and to report six cases seen since 1947.

Since 1940, there have been but thirteen cases reported to the Arizona State Department of Health. (1) However, there must have been more cases than thirteen observed during that time because seven cases have been seen in Mesa since 1947, six of which are being reported in some detail in this paper. I know of three other cases which have been treated in Tempe, Arizona during this same period.

This disease is caused by a small pleomorphic non-motile, gram-negative bacterium. The organism was first definitely described and identified by McCoy and Chapin (2) in 1911 in Tulare County, California, as obtained from dead ground squirrels.

The first reported death from this disease was by Francis (3) in 1920 when he was investigating rabbit fever in Utah. He discovered that the blood of a rancher, who had been bitten on the neck by a deer fly, when injected into a guinea pig produced the plague-like disease described by McCoy. Francis reports that there are at least twenty methods known by which man may be infected with tularemia. The most common methods, we believe, are from the cotton-tail rabbit, jack rabbit, snowshoe hare, bites of ticks; namely, wood tick and dog tick, fleas, and deer flies. Also by bites from such animals as cats, opossums, dogs, coyotes, squirrels, hogs, sheep, and goats. He states that no human infections have been traced to the domestic rabbits; however, one of our cases gave a history of skinning a tame rabbit about ten days before the onset of his illness.

It is suggested this is truly an American disease because the organism was first described here and the first reported death was in the United States. But tularemia as an endemic disease of man has been observed in forty-six states and in Alaska. It has been reported from Canada, Japan, Soviet Union, and in recent years, in epidemic proportions from Europe. Dr. Rosen, a physician who, as a boy, lived in Tulare County, California where he has since practiced many years (2) states he has seen only one case of tularemia in that county and that is the only case reported in Tulare county since 1940 except one other questioned report. So he concludes it must be rare in the place of its scientific birth.

In contrast to the few cases seen in Tulare, California, it is of interest to note the frequency with which it is reported in Arkansas (4). In the ten year period from 1938 to 1948 there were 1,231 reported cases. A point of interest is that in that state the disease is definitely an occupational hazard and the Arkansas State Board of Health reports the chief source of the infection was tick bite. Only twenty percent of their cases were infected by direct contact with rabbits. This is in contradistinction to the more common opinion that ninety percent of the disease is rabbit borne.

These authors emphasize the fact that tularemia constitutes an occupational hazard to certain groups of laborers. They further state tularemia is nowhere classified as an occupation disease; however, two of the cases which will be reviewed here were accepted by the Arizona Industrial Commission as occupational hazards and were so handled.

There is some difference of opinion as to the dependability of laboratory procedures used in

Read before the Annual Meeting Arizona Medical Association, Phoenix, May 3, 1950.

arriving at a diagnosis of tularemia. Some investigators (6) believe, the diagnosis is best made by a blood serum agglutination test using *B. tularensis* antigen. The agglutinins are generally absent from the blood during the first week of the disease appearing in increasing concentration from the second week on to reach a maximum concentration in from four to seven weeks (7, 8). Agglutinins for the *Brucella* organisms may develop in tularemia. If the infection is primarily caused by *Pasteurella tularensis*, a higher titer for that organism should be present. It is reported that cross agglutination with the *Brucella* occurred only in sera which agglutinated tularemia in dilution of 1:320 or over. It is suggested for a diagnosis, a titer of at least 1:80 should be present. A marked rise in titer, especially when the patient is improving clinically, is the more diagnostic of all the laboratory methods except by animal inoculation of sputum, blood, or material aspirated from a lymph node or the lung.

There are several forms of the disease described but the majority of the cases can be divided into: 1—ulceroglandular; 2—the typhoidal type (four cases being presented here of this type), and 3—pneumonic type (two cases being presented are of this type.)

There were 268 reported cases of tularemic pneumonia up to 1945 (10) and of these cases, 161 recovered, resulting in a mortality rate of forty percent. This, of course, was before streptomycin was available. Hunt (11) of Vanderbilt University, reporting in 1947, had treated twelve cases of pleuropulmonary tularemia with streptomycin in doses 0.4–1.6 grms, daily for three to nine days. He concluded the rapid disappearance of tularensis from the sputum or pleural fluid as determined by animal inoculation, indicated that the organism was rapidly killed in the tissues.

CASE NO. 1

This is a case of a twenty-three year old Mexican laborer who entered the hospital on April 13, 1947 complaining of severe headache, high fever followed by chills, heavy perspiration, and generalized body aching. There was also a history of slight injury to the chest which somewhat confused the picture.

Physical examination at the time of admission revealed a patient who appeared to be extremely uncomfortable and in pain. There were no significant physical findings. There were no

open lesions, no palpable glands and the spleen was not palpable. The leukocyte count was 9,000 per cubic millimeter. The differential blood count, the erythrocyte count, and the mazzini test were normal. The urine was normal. On the following day agglutination tests were normal for typhoid, paratyphoid and OX-19. The *Brucella abortus* agglutination reaction was positive in 1:1280 dilution. It was, therefore, concluded that this patient had Malta fever for which he was treated with penicillin and sulfadiazine. He was given 6.8 grams of streptomycin before the diagnosis of tularemia was established. It was given along with penicillin and sulphanilimide. The diagnosis of Malta fever was kept for ten days. During this time the patient continued to have severe pain, generalized aching, severe headaches (retro-orbital in location), and profuse sweats followed by chills, and, at times he was not entirely national. We then felt that there was another element to this case which had been missed. The agglutination tests were repeated, this time including tularemia. The patient had been closely questioned and he rigorously denied dealing with wild or tame animals in any way until he was reminded by a friend that he had skinned a wild rabbit. He then remembered the incident and recalled getting blood on his hands from the rabbit. The agglutination test for tularemia was positive in 1:2560 dilution. At this time the leukocyte count was 23,000 per cubic millimeter with seventy-six per cent polymorphonuclear cells. The hemoglobin was seventy-three per cent. A blood culture reported May 11, 1947 stated, "Culture shows somewhat non-motile, gram negative bacillus morphologically similar and culturally characteristic of bacteria tularensis." A blood culture taken ten days earlier was also reported as containing bacteria tularensis.

By this time the patient had become more ill and required more sedation. He had marked perspiration, lost ten pounds, developed palpable axillary glands, bilateral inguinal glands, and his spleen was palpable. Roentgenogram of the chest reported on April 26, 1947, "No abnormalities."

After receiving the report of the positive agglutination test for tularemia streptomycin was given (.2 grams q4h). The penicillin and the sulfanilamide were discontinued. During the first ten days of the streptomycin therapy the

patient's temperature ranged from 100 to 103 degrees Fahrenheit. On May 9 the temperature was normal and it remained so during the remainder of his stay in the hospital. Within two or three days after streptomycin therapy the patient began to feel better; the perspiration stopped, the chills subsided (chills that had been so severe as to shake the bed), and his appetite improved. He required less sedation and codeine for the control of pain. A repeat agglutination reaction for tularemia was reported on May 10, 1947 as positive in 1:6000 dilution and the *Brucella abortus* reaction was positive in 1:40 dilution. We believe that this was, without question, a case of tularemia. The patient had a satisfactory response to the use of streptomycin. He fulfilled the criteria required by some investigators of this disease as he improved clinically. There was a very definite increase in the serum agglutination titer which was quite pronounced and rapid. It is suggested by Dr. D. T. Smith of Duke University that such a rise may result from the antigenic stimulus provided by destruction of large numbers of organisms in rather a short period of time such as is probably accomplished with streptomycin. This patient had a total of 19.2 grams of streptomycin. The administration of the streptomycin definitely produced the turning point in this case, and it is not unlikely that the patient might have expired without its use.

CASE NO. 2

This is a case of a forty-two year old farmer who was seen in the office March 30, 1948, at which time he was complaining of severe body aching, headache, weakness, heavy perspiration, and chills. At the time of admission to the hospital there were no significant physical findings except that he was extremely ill and unquestionably in a state of dehydration. The temperature was 101 degrees Fahrenheit. The erythrocyte count was 4,200,000 and the leukocyte count was 9,400. The hemoglobin was 94 per cent. There were 33 per cent lymphocytes and 66 per cent polymorphonuclear per cubic millimeter. The urine was normal except for an occasional white blood cell, and the mazzini test was normal. This patient was specifically asked if he had been hunting, shooting squirrels or rabbits, or had in any other way come in contact with wild animals. This he explicitly denied. The agglutination tests for typhoid, paratyphoid, OX-19, *Brucella abortus*,

and the routine leukocyte count, erythrocyte count, and sedimentation rate were ordered; all including *Brucella abortus* were negative. The agglutination test for Tularemia was not given. He was given penicillin, but failed to show any improvement. He continued to have most severe pain, retro-orbital headaches, and severe chills with heavy perspiration to the extent that frequent change of bed linen was required. His temperature fluctuated between 99 and 103 degrees Fahrenheit. He was disoriented and did not know that he was in the hospital. He did not recognize his brother who spent considerable time at his bed side.

After a week of penicillin therapy and the failure of any abatement of symptoms or progress in the case and in spite of his denial of having had contact with any wild animals and his statement that he had not been away from his ranch or the town of Gilbert, agglutination tests for paratyphoid, typhoid, *Brucella abortus*, OX-19, and Tularemia were ordered April 7. The agglutination reaction for Tularemia was positive in a titre of 1:640. There was a negative *Brucella abortus* reaction. On April 8 streptomycin was begun (.2 grams, q4h). The temperature began to level off and at the same time the patient began to feel better. He cleared mentally, his fever and chills subsided and there was definite improvement. When he was feeling well again and mentally clear, he was again asked about the handling of any rodents or rabbits, and at this time, he remembered having skinned some tame rabbits for a neighbor about two weeks prior to the onset of his illness. April 12 the Tularemia agglutination titer was 1:320. The increase in the serum agglutination titer as was seen in our previous case was not present. At no time was there an external lesion. There were no palpable lymph nodes and the spleen was not palpable. The most characteristic factors of this patient's illness was the extreme headache, retro-orbital in location, marked muscle soreness, and heavy perspiration, chills and fever. One year later the agglutination reaction for Tularemia was positive in 1:320 dilution. It was several months before he gained back his strength and vitality. The patient received a total of 8.4 grams streptomycin.

Note: As was mentioned earlier in this paper Francis states: "No human infections have been traced to domestic rabbits," however, it is most

difficult to deny that Tularemia was contacted from the neighbor's rabbits in this case.

CASE NO. 3

This is a case of a fifty-eight year old male farmer from Tempe, Arizona. He came to the office November 22, 1948 complaining of severe body aches and pains, headache, weakness, chills and fever. This man reminded us so much of the case just presented that the first question we asked him was, "Have you been out hunting?" He admitted that about one month previously he had been hunting and had killed and skinned a deer. About ten days previous he had killed and skinned an elk. This man was sent directly to the hospital. Agglutination tests for typhoid, paratyphoid, OX-19, Brucella abortus and Tularemia were requested and all the reactions were negative except the Tularemia reaction which was positive in 1:640 dilution. The erythrocyte count was 3,920,000 and the leukocyte count was 7,350 per cu. mm. The mazzini test was negative, and the urine was normal except for occasional white blood cells per high powered field. The patient was promptly given streptomycin (the usual dosage of .2 grams q4h). The temperature came down to normal the first day after the streptomycin was begun. It went back to 102 degrees Fahrenheit the first afternoon, then gradually came to normal and remained so throughout his stay in the hospital.

This man also had very severe headaches and generalized body pain with the usual chills and fever. A roentgenogram of the chest, taken November 23, 1948, was reported as "healthy chest". This patient had a total of 9.6 grms. of streptomycin. He left the hospital feeling well.

Another case, observed by others, was in the hunting party with the above patient. This person ate some elk meat not long after which he, too, contracted Tuleremia. He was successfully treated with streptomycin.

CASE NO. 4

This is a case of a forty-five year old sheep inspector for the state of Arizona. This man first presented himself at the office complaining of generalized aches and pains, a feeling of fatigue, and of simply being "sick" all over. He had fever and chills so severe that they shook his bed while he was at home. At this time he started to complain of a non-productive cough and pain in the chest. When examined in the office he had a dusky, cyanotic appear-

ance. He was extremely uncomfortable and complained of painful respiration. Examination of the chest revealed moderate splinting of the chest with some limitation of excursion of the left diaphragm. There were many fine crackling rales at the left base. He had an almost continuous, hacking dry cough. He was hospitalized with a temperature, at the time of admission, of 100 degrees Fahrenheit. The erythrocyte count was 3,950,000 per cubic millimeter and the leukocyte count was 10,000 per cubic millimeter. The mazzini test was negative. The specific gravity of the urine was 1.003 and it contained an occasional leukocyte per high powered field. The agglutination reaction for Tularemia was positive in 1:640 dilution. The agglutination reactions for typhoid, paratyphoid, Brucella abortus and OX-19 were normal. A roentgenogram of the chest was reported March 8 as—"AP and lateral chest films show infiltrative shadows of increased density involving most of the left lower lobe. The left diaphragm is flattened, the costophrenic sinus partially obliterated by pleural thickening which the lateral view shows to be situated anteriorly. The right lung field, the ribs and the heart are normal. IMPRESSION: Pneumonia, either atypical or viral or a bronchopneumonia."

Streptomycin therapy was started (.2 grams q4h). The temperature started to decline and did not again go above 100 degrees Fahrenheit and on the fifth day of streptomycin therapy his temperature reached normal and remained so throughout his stay in the hospital. The patient's most distressing symptom was painful respiration made worse by coughing. He had begun to have a moderate amount of mucopurulent sputum. He had such a degree of pain in his chest that he required a considerable amount of codeine for relief of pain and he moved very little about in the bed because of his pain.

Additional roentgenograms were made of his chest which showed a rather slow improvement; however, there was definite evidence of clearing. On March 11, the films revealed that the pleural reaction at the left costophrenic sinus had not changed and that there was no free fluid present.

This patient had been inspecting a flock of sheep and goats down in the Wilcox area about ten days before the onset of his symptoms. This patient left the hospital on the 17th of March free from any pain, his cough had

not entirely subsided, and he still complained of marked weakness. For several weeks he was too tired and weak to attend to his duties as a sheep inspector. After several weeks a roentgenogram revealed the lung fields to have entirely cleared. This patient had a total of 13.2 grms. of streptomycin. This is one of the cases which was accepted by the State Industrial Commission as a compensable case.

This case is very suggestive as Reimann (9) states that the pathogenesis of primary pulmonic tularemia is apparently inhalational in mode, such as inhaling bacilli suspended in the air as dust, in droplets from patients or animals who have Tularemic pneumonia, or from hand-dried cultures of the organism.

CASE NO. 5

This is a case of a thirty-two year old nurse's aide who presented herself in the office complaining of sore, fatigued muscles and joints. She stated she had not been well for the past three or four weeks. She was a nurse's aide at the hospital. This patient had, about fourteen months previous to this time, a breast amputation for adenocarcinoma of the left breast. On May 3rd she complained of very severe headaches during which she stated she could not think clearly. She complained of very severe generalized aching with fever followed by chills and a feeling of "heaviness" in the chest. The physical examination at the time she was seen in the office revealed some rales in the left lower base. She had marked tenderness on motion of joints and muscles and complained of "hurting" even when changing position. There were no other significant physical findings, no palpable mass in the abdomen, no palpable glands and the spleen was not palpable. There were no skin lesions or nodules. This patient was hospitalized. Roentgenograms of the chest failed to reveal a shadow of the left breast. There had been no appreciable change in the appearance of the lung field since the film made on April 2, 1948.

At the time of admission the erythrocyte count was 3,890,000 per cubic millimeter and the leukocyte count was 5000 per cubic millimeter. The differential count was normal and the mazzini test was negative. The urine contained a few white blood cells per high powered field. Blood agglutination reactions at that time were negative for typhoid, paratyphoid, Brucella abortus and the proteus OX-19 reaction was of 1:80.

A Tularemia agglutination reported the following day, May 6, was positive in a 1:320 dilution. Roentgenographic examinations two days after her admission were reported as, "Re-examination of chest shows infiltrative area of almost homogeneous density which involves the lower half of the left upper lobe and on AP film extends some just above the diaphragms to reveal the seventh rib posteriorly. The costophrenic angle is clear. There is, also, some increase in the hilar shadow on this side. The right lung field is clear." He also states that "A review of a film made May 3, 1949 shows that at that time there were several ill-defined, streaky shadows of increased density in the left lower lung field, which were overlooked at that time. These probably represent the beginning of the present process".

On May 11 there was a repeat agglutination reaction which was positive in 1:320 dilution for Tularemia which was also positive in the same titer of May 16. The sputum examination on May 11 revealed mixed bacteria. Blood culture report of May 31 was negative. This blood culture was reported on May 31, but taken during her stay in the hospital. This patient was started on streptomycin therapy May 5, the usual dosage of .2 grams q4h. The temperature was of a septic type of fever from the time of her admission until the fourth day of the streptomycin therapy. On the sixth day of treatment the temperature came to normal and remained so throughout her stay in the hospital. This patient, as did our previous patients, complained of severe muscular pains and headaches and during the first four or five days in the hospital, she continued to have severe chills with heavy perspiration and a dry non-productive cough. There was definite dulling of her sensorium. By the fifth day in the hospital on streptomycin therapy her symptoms had begun to subside, there was much less muscle and joint soreness. She began to eat better, her cough had begun to improve, and by this time she had developed some palpable nodes in the axillary and cervical regions. At no time did she have a palpable spleen. There was never a body rash or any kind of skin lesion. This patient presented somewhat of a problem to us because she emphatically denied having had contact with any kind of domestic animals or wild animals for the past several months. No animals had been brought into the home. We

began to speculate as to how she contacted this disease. We felt the diagnosis was dependable. She had a positive agglutination with increase in titer as she progressed and recovered from the disease. She had the typical set of symptoms that our previous patients had. She presented roentgenographic findings similar to the case last reviewed and as we stated, she was a nurses' aide and had given a lot of care to the patient who had recovered a month before from pulmonary Tularemia. The date of onset of symptoms was indefinite; however, she gave the onset of her feeling sick and achey and her muscular pains about three to four weeks after she had last attended the case which was just previously reviewed. We could see no other explanation than that this patient probably contracted Tularemia from this first case of pleuropulmonary Tularemia. We came to this conclusion after a lot of thought and consideration, and realizing there has been no reported case of proved human case-to-case transmission. However, it is suggested because of increasing pulmonary Tularemia, transmission by way of the patient's sputum is not impossible. (3) There was recently reported by Aagaard (5) the case of a graduate student in bacteriology who contracted Tularemic pneumonia after a rabbit sneezed in his face. This case just presented was reported to the Industrial Commission and was accepted and cared for on the same basis as the previously reported one.

This patient had a total of 8.4 grams of streptomycin. She was away from her job for several weeks after discharge from the hospital with complaints of weakness and muscle soreness. She is back on her job as a nurses' aide in our local hospital and is observed from time to time with a good bit of interest from the standpoint of her Tularemia as well as the adenocarcinoma of the breast.

CASE NO. 7

This is a case of a twenty-six year old veterinarian from Safford, Arizona who was seen in Mesa, January 5th in a private home. The patient had come to Mesa to attend the Arizona State Veterinary Convention. He states he was essentially well until December 31, 1949 when he began having generalized body aching, headaches of increasing severity, retro-orbital in location. He had fever, profuse perspiration and chills.

One interesting side light on this patient's his-

tory is that about three weeks before the onset of his present symptoms he had been vaccinating cattle for Bangs disease and had used a designated "Strain 19" brucella abortus vaccine, which is an attenuated strain, and some squirted into his eye accidentally. Because of this history, his local doctor did agglutination tests for *Brucella abortus*, the reports for which were not available at the time he left his home to attend the state convention in Mesa. However, a day or two after the onset of symptoms they subsided and the patient felt well enough to leave home and come to the convention.

On the basis of the possibility of his having contracted *Brucella abortus* from the manner in which he was accidentally vaccinated, and because of the severity of his symptoms, it was decided to treat this man with chloromycetin. After two days treatment in the home, the patient became worse. His pain became almost unbearable and the headaches were severe. He had severe chills, fever and perspiration. He was extremely uncomfortable and at times not entirely rational. He was hospitalized January 7, 1950.

Agglutination reaction for Tularemia, reported on January 8, 1950, was positive in a dilution of 1:320. The report was made available about noon on the eighth at which time streptomycin therapy (.2 grams q4h) was begun. The temperature on the morning of the 9th had reached normal and remained essentially normal during his stay in the hospital. The erythrocyte count was 4,600,000 and the leukocyte count was 7000 per cubic millimeter. The reaction for *Brucella abortus* was negative and it was later found that the blood sent to the Arizona State Laboratory by his local doctor was also negative for *Brucella Abortus*. On January 11, 1950 an agglutination titer of 1:160 for Tularemia was reported.

This man left the hospital on January 13, 1950 after five days of essentially normal temperature. He received a total of 7.2 grams of streptomycin. He returned to his home in Safford and two or three weeks time elapsed before he felt strong enough to return to his regular work.

CASE NO. 7

The seventh case in our series is not being reported in detail because part of the pertinent laboratory data was lost from the record.

SUMMARY

1. A brief review of tularemia has been pre-

sented—with the report of six additional cases. All six cases successfully and promptly responded to treatment with streptomycin.

2. Tularemia may be more common in the state of Arizona than is indicated by the number of cases which have been reported to the State Health Department since 1940. One case presented was probably contracted from a tame rabbit.

3. Two cases of pleuropulmonary tularemia have been presented, one of which seems to be from direct contact with another known case of tularemia—a situation not known to have been

previously reported. This case seems to favor an inhalation method of infection.

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RHEUMATOID SPONDYLITIS

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Rheumatoid spondylitis is a chronic, progressive, crippling disease involving the spinal column and its adjacent structures. Numerous synonyms can be found in the literature; however, some rheumatologists endeavor to make a distinction between certain ones, but there are no definite clinical differential points. The lack of uniform terminology has produced the following synonyms: spondylitis ankylopoetica, spondylarthritis, Von Bechterew's disease, Marie-Strumpell's disease, ankylosing spondylitis, rhizomelic spondylitis and atrophic spondylitis.

The initial description of this disease was published by Von Bechterew in 1893, at which time he also emphasized its neurological manifestations. The next clinical reports of the characteristics of this disease were given by Strumpell in 1897 and Marie in 1898. Since then much has been compiled in the literature, especially during the past decade. None of these have given the answer to its etiology or specific treatment.

ETIOLOGY

Many rheumatologists feel that the onset of rheumatoid spondylitis is usually preceded by an acute or chronic infection or by recurrent bouts of acute infections with arthritic manifestations. On the other hand, preceding acute or chronic trauma to the spine may be the outstanding possible etiological factor, but as shown by Boland and Present (1), it is not always possible to incriminate a precipitating factor, as in one series he found 80% did not

give possible immediate cause and the remaining 20% gave no constant cause.

Many patients feel that their spondylitis is due to an injury, even though at the time of their injury roentgenograms of the spine revealed moderate or advanced changes consistent with long standing rheumatoid spondylitis. It is difficult for the physician as well as the patient to understand how a process of this nature may be present for months or even years before symptoms become evident. However, it is true that many cases of spondylitis are brought to light by insignificant trauma. Is it not logical for an individual with the susceptible spine to develop spondylitis, whatever the inciting cause, be it infection, exposure, psychic strain, or trauma?

PATHOLOGY

The important lesions involving the spine in rheumatoid spondylitis are inflammatory and progressive in nature, attacking the synovial joints; usually beginning in the sacro-iliac joints and then progressing upward to involve the diarthrodial or apophyseal joints of the lumbar, thoracic, and cervical spine, and the paravertebral ligaments and muscles; later involving the costovertebral and costochondral articulations. However, this process may begin in any region of the spine, nor does it necessarily follow this sequence of progression. In the early stages the diarthrodial joints present a synovitis with roughening of their articular cartilage, destruction of the cartilage, fibrous ankylosis, and eventually, bony ankylosis. One commonly sees spasm and contractions of the paravertebral

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muscles. Calcification of the paravertebral ligaments frequently occurs, giving the characteristic "bamboo spine." This may produce kyphosis, or the stiff, straight "poker spine". The intervertebral disks are not affected in this process; however, it is common to have mild or marked decalcification of the vertebral bodies.

CLINICAL MANIFESTATIONS

Age. The usual age at onset of symptoms in rheumatoid spondylitis is during the third to fourth decade, the largest majority falling in the third decade of life; however, the initial symptoms may begin at any age. There is no particular age-difference at time of onset in male or female.

Sex.—The approximate ration between male and female is nine to one. The significance of this is not clear. If trauma is considered as an etiological factor this may partially explain the difference because of more arduous activity on the part of the male.

Incidence.—Incidence of rheumatoid spondylitis to rheumatoid arthritis of peripheral joints has been reported as 1:6⁶, 1:11², 1:13⁹, 1:19⁵. A higher ratio was observed in the armed forces, approximately 1:3¹. Rheumatoid arthritis of the peripheral joints is present in about 20% of the cases of rheumatoid spondylitis.

Onset.—in approximately 90% of the cases of rheumatoid spondylitis the onset is insidious and progresses slowly, with frequent remissions and exacerbations. The beginning is usually in one or both sacro-iliac regions, producing muscular spasm, soreness, and tenderness in this area which is associated with slight to marked stiffness in the same area. In a small minority of the cases the onset is acute, and rapidly progressive.

Symptoms, signs, and course.—Episodes of low backache and stiffness are the dominant complaints, and these frequently last from a few to several days and then subside. These attacks are frequently called lumbago, and they become more frequent and more intense. At first these tend to be relieved by aspirin and local heat, while at other times relief is obtained by mild exercise or rest. These symptoms are usually more pronounced in the morning on arising, with physical inactivity and damp weather. The pain and stiffness later become more persistent and are frequently associated with catches or sharp pains in the low back region, and the usual measures bring relief less

adequately. The patient finds it very difficult to describe his pain except that it is a tired, sore, deep ache with variable tenderness and stiffness across the low back and is aggravated or brought on by sudden physical exertion, lifting, bending, twisting, jolting, and sneezing or coughing. Occasionally on retiring at night the patient feels well, to be awakened in the early morning hours with low back pain. Sciatic pain is common and may be severe at times.

As the apophyseal joints of the spine are involved there is associated muscular spasm of the paravertebral muscles which tends to hold the spine straight, producing a flattening of the lumbar curve. When this muscular spasm is greater on one side of the spine than the other it will produce scoliosis. This causes limitation of motion of the spine, and tenderness to pressure or percussion over the spinous processes. Later the apophyseal joints become ankylosed, and the paravertebral ligaments calcify. At this stage frequently the back pain and tenderness lessen but the back remains stiff and rigid in a straight or kyphosed position.

One of the most common deformities is decrease of anterior posterior chest diameter, giving



Figure 1: Note 1 "Bamboo" appearance, calcified ligaments; 2 Sacroiliac ankylosis; 3 hip changes; 4 involvement of symphysis pubis; 5 changes of Ischium.

ing an anterior flat chest appearance with frequent lumbar lordosis, dorsal kyphosis with protruded head, depressed chin and ankylosed neck, the ribs being fixed in expiration as a result of costovertebral ankylosis. Chest expansion is zero or very low and breathing abdominal. This accounts for the high incidence of pulmonary infections which are so often fatal. The vital capacity of these patients is very low but this may be overcome if correct deep breathing exercises are instituted early. Attacks of intercostal neuritis as a result of intercostal nerve irritations at the foramen ovale are common.

Constitutional manifestations of weight loss, anorexia, weakness, depression, irritability, low grade fever, tachycardia, and tiredness are usually observed, as are also elevated sedimentation rate, and mild secondary anemia.

ROENTGENOGRAPHIC FINDINGS

Although the roentenographic changes of rheumatoid spondylitis are usually characteristic, the changes may not appear for several months or years after the onset of the clinical signs and symptoms. The notable changes follow the pathological course of usually appearing in the sacro-iliac joints first, to be followed in the apophyseal articulations and paraspinal ligaments. The intervertebral disks remain normal and the vertebral bodies show only secondary decalcification.

The earliest change of the sacro-iliac joints to be noted is blurring of the joint space, later followed by broken or increased densities of joint margins and mottled appearance of adjacent bone due to areas of osteoporosis and sclerosis. Occasionally there is a pseudo-widen-

ing of the joint space as a result of marginal osteoporosis. The final stage of sacro-iliac involvement is characterized by disappearance of the articular space and the presence of bilateral ankylosis and increased osteosclerosis. The bilateral sacro-iliac change is most characteristic of rheumatoid arthritis, and was found to be evident in 100% of the cases, by Boland and Pleasant (1), and others have found this to be so in approximately 98% (3, 6, 7) of their cases of sacro-ileitis. Unilateral sacro-ileitis may be due to rheumatoid spondylitis but other causes must be ruled out, ex. tuberculosis.

The characteristic changes of the apophyseal joints are blurring of the joint bases and destruction of the articular surface. There may be areas of sclerosis and osteoporosis followed by ankylosis.

Usually the joint changes are noted in advance of the calcification of the paraspinal ligaments. The calcification of these ligaments is known as syndesmophytes, (Fig. 1, 3, 4.) and gives the characteristic bamboo appearance to the spine.

In pelvic bones one may occasionally observe periosteal thickening with roughening and mottled appearance of the ischium and pubes, (Fig. 1, 2, 3) as well as involvement of the symphysis.

DIAGNOSIS

If the possibility of rheumatoid spondylitis is kept in mind, cases will be diagnosed early, remembering that x-ray evidence comes later and clinical findings usually first. Always suspect rheumatoid spondylitis in young male adults



Figure 2: Note 1 Sacroiliac ankylosis; 2 Roughening of Ischium; 3 hip changes.

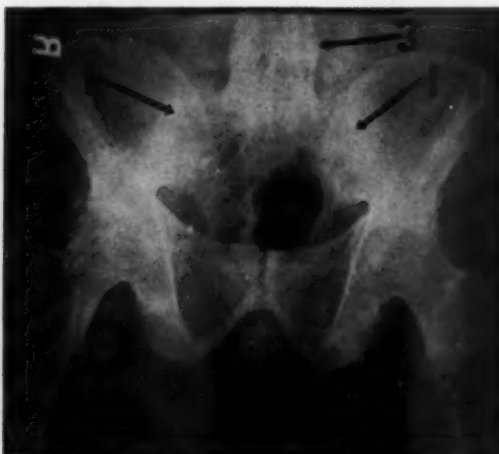


Figure 3: Note 1 Sacroiliac ankylosis; 2 Ischial changes; 3 Calcified spinal ligaments. Also involvement of symphysis pubic.

with chronic, recurrent, persistent bouts of low back, tiredness, aching, and stiffness, with or without catching pains, as well as radiculitis, whether intercostal or sciatica, particularly if initiated by sneezing, coughing, twisting, or exertion. In these early cases a low grade fever may be present, as well as a marked elevation of sedimentation rate in approximately 85% of the cases, again remembering that 15-20% of these people have a normal sedimentation rate.

The question of diagnosis is unmistakable after the disease has advanced sufficiently to produce characteristic physical and roentgenographic findings. Physical findings are those of "poker spine" and limitation of motion, paravertebral muscle spasm, absent lumbar lordosis, upper dorsal kyphosis, stiff neck with protuberant head and depressed chin, as well as flat anterior chest with very little expansion, and abdominal breathing.

X-ray evidence reveals sacro-iliac and apophyseal joint involvement, decalcification of vertebrae and calcification of spinal ligaments. However, spinal ligament calcification and unilateral sacroileitis alone are not to be considered sufficient evidence for diagnosis of rheumatoid spondylitis. These cases are for the most part easily differentiated from osteoarthritis of the spine

where osteophytes are found, and seldom confused with syndesmophytes. Here there is usually a narrowing of the intervertebral disk as well as absence of vertebral decalcification. In osteoarthritis the patient is usually past forty and the general appearance is much better than in rheumatoid spondylitis. In fact, these patients are usually overweight, fever is absent and the sedimentation rate normal. Certain specific infections, such as tuberculous sacro-ileitis, must be kept in mind, and these are usually unilateral. This alone is reason enough for careful, complete, physical examination and necessary laboratory tests, to rule in or out one or the other. In such specific spinal infections as typhoid or tuberculosis or Brucellosis, the lesion is fairly well limited roentgenographically to small sections of the vertebral column. Other conditions which may commonly simulate rheumatoid spondylitis and must be ruled out are psychogenic rheumatism, ruptured intervertebral disks, primary fibrositis and subfascial fat hernias. In these conditions the sedimentation rate is normal and the x-ray is normal except in herniated disks.

TREATMENT

There is no known cure for rheumatoid spondylitis, but early, continuous treatment of the right nature will do much to give relief of pain, prevent spinal deformity, and at times shorten the course of the disease. Symptoms are often relieved after complete ankylosis has occurred except for the limitation of motion and certain activities.

1. Orthopedic prevention of deformities is much more effective than is their correction. Much can be done by the orthopedist to relieve strain, spasm, and to prevent loss of height, kyphosis of the spine, and ankylosis of the hips. Proper beds, sleeping habits and proper braces afford much relief.

2. Physical therapy. Local heat and gentle massage increase the sense of well being, aid muscle spasm and tone, and prevent somewhat muscular atrophy and contractures. Deep breathing and postural exercises done regularly and untiringly are of the utmost importance.

3. Roentgen therapy. Many programs of x-ray therapy can be found in the literature and many excellent results have been reported. Notable improvement has been noted in as high as 70% (4, 6, 8) of the cases of some series. Repeated series may be given and improvement



Figure 4: Note 1 Bamboo Spine appearance.

usually begins in about one to two weeks after completion of the first treatments. The results are, apparently, the relief of pain and muscle spasm, as progression may be noted roentgenographically in the disease.

4. General. When foci of infection are present their removal should be advocated in order to improve the general health. Anemia, weakness, and undernutrition should be treated and improved accordingly. Fever therapy, either foreign or mechanical, may at times afford temporary relief. Vaccines are unpredictable and gold salts disappointing. Massive doses of Vitamin D have no place in the treatment of this disease.

5. Climatotherapy. Many note relief in dry warm areas, but all do not benefit by such a change.

6. Hormone therapy. The recent advent of Adrenal Cortical Hormone 17 Hydroxyl-Dehydrocorticosterone (Compound E) and Pituitary Adrenocorticotrophic Hormone (ACTH) has possibly been the greatest step in the treatment of rheumatic conditions since the advent of the salicylate drugs. In spite of the enthusiasm, there are many disadvantages to overcome in the use of these hormones. If it becomes possible to eliminate or prevent the cause of serious side reactions and still maintain the beneficial results of these compounds, many arthritics will have a brighter, more comfortable and useful life than has even been possible for them before. The exact influence that these compounds have had upon rheumatoid spondylitis has not been adequately investigated as yet.

PROGNOSIS

The extent of deformities and permanent disability depends mostly on the type of treatment the patient receives. In cases of improper care the disease usually progresses, subject to remissions and exacerbations, each exacerbation causing more deformity and the patient seldom having relief from pain until bony ankylosis has occurred. These patients are commonly left with a rigid rib cage, "poker spine", or marked kyphosis, and a variable degree of pain. This end may be reached in 5-20 years depending on the severity and velocity of the disease. However, with proper and untiring therapy many deformities can be prevented and others minimized, thereby maintaining the patient's usefulness. Rheumatoid spondylitis within itself

is not a fatal disease, nor does it usually shorten life. Death usually occurs from some concurrent infection, most often pulmonary. Complications of iritis, pleuritis, and endocarditis are more than incidental. Subcutaneous nodules may occur if peripheral joint involvement is present.

COMMENT

1. Rheumatoid spondylitis is a chronic, progressive disease characterized by variable remissions and exacerbations. With each exacerbation there is increased deformity and limitation of motion. Its course may become arrested at any stage of progression, and pain becomes less as ankylosis occurs, whether the patient's spine is straight or kyphosed.

2. To diagnose rheumatoid spondylitis early and without x-ray evidence one must be ever conscious of its frequency and clinical picture. The diagnosis is simple after the characteristic deformities and x-ray changes have occurred.

3. Successful, as well as encouraging results in treatment depend on early diagnosis as much as the correct type of therapy.

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OCCUPATIONAL DISEASES OF THE CHEST

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The reader is to understand that this article is a condensed version of the discussion of the subject given before the General Practice Symposium on Chest Diseases. It is unfortunate that this must be so, since certain omitted aspects are actually essential to a better grasp of the problem. As in the original paper, the emphasis here will be placed upon diagnosis.

In no other phase of medicine are the fundamental steps in diagnosis so ignored as they are in the conclusions reached regarding diseases of occupational origin. Physicians who will go to great end to prove a diagnosis of pulmonary tuberculosis, for instance, will assume the diagnosis of an occupational disease without adequate study or inquiry. They are too prone to accept the patient's statement that his illness is due to some type of exposure at work. This is understandable, since the average physician receives no teaching of this subject in medical school and his post-graduate courses have been largely devoid of any subject dealing with the diagnosis of the occupational diseases. Nevertheless, excusable or not, failure to accurately diagnose an occupational disease works undue hardship upon the workman suffering from or allegedly suffering from an occupational disease.

Omitting mention of several basic steps in the diagnosis of the occupational disease in general, three primary considerations concern us when we deal with affections of the lungs. The first of these is the history. It is obligatory that the patient's complete life-time employment be obtained. The physician must elicit with meticulous care each and every activity the workman has engaged in since he left school. This is especially true when it is suspected that the patient's lungs have been affected by a dust. To illustrate, a physician was at a loss to account for a considerable degree to fibrosis of the lungs as revealed by x-ray in a man whose employment history was that of an apartment house manager for 7 years, and prior to that a rancher for 4 years. Had the examining physician inquired further he would have found that the man had been a hard rock miner for 22 years, an employment which explained the pulmonary

fibrosis.

The second important step is to determine the nature of the substance alleged to have caused the pulmonary disturbance. If it is a chemical in the nature of a fume or gas, or even a dust, one must distinguish between the irritants, the asphyxiants, and the large group of volatile substances having a narcotic or anesthetic-like action. For the purpose of this article and without opportunity to explain in detail, it can be stated that most chemicals do not affect the pulmonary tissue. The irritants affect the upper respiratory tract, but the exposed victim usually withdraws from his exposure before the lungs are affected. Likewise, the asphyxiant action of carbon monoxide or the cyanides is not upon the lungs but rather the action takes place within the blood stream or upon the cells of the body tissues (internal respiration). As for the volatile drugs, they pass through the lungs to be absorbed by the blood stream and affect primarily the central nervous system.

Exceptions to the foregoing paragraph are found in such metals as cadmium oxide or beryllium, such gases as nitrogen dioxide and phosgene, and the dust, of which more subsequently.

The third important phase in diagnosis is the utilization and interpretation of the x-ray films. Herein lies the chief diagnostic pitfall. Today the x-ray machine is as ubiquitous in the average physician's office as it diathermy. It is reasonable to assume that for the purpose of determining a fracture or the presence of a foreign body only ordinary acumen is necessary. This is not true in the case of the interpretation of chest x-ray films. It is especially true that probably no phase of roentgenographic interpretation is as inaccurate as that of the chest films of industrial workers. There seems to be a universal tendency on the part of the inexperienced physician to read into chest films of those exposed to dust or chemicals a pathology which is not actually present. A few scattered, old nodules or a minimal increase of the perivascular markings in a housewife would be accepted on their historical face value, but in the industrial worker they are too often given unwarranted emphasis. This misinterpretation will force a workman to withdraw from a job which is not only re-

munerative but which was attained only after long years of labor. Also it ill cause him to live under a cloud of apprehension. On previous occasions and in other articles I have quoted Pancoast. It is just as timely to do so here. He once remarked, "Let's not talk about the normal chest. We probably see normal chests only in children. Let us speak about the healthy chest."

Concerning the dusts an unfortunate situation exists in that many years ago the term pneumoconiosis was introduced. With the passage of time the suffix "osis" conjured up in the minds of many physicians the disease known as silicosis, so that today there exists a failure to distinguish between a benign pneumoconiosis and that condition which results in a disabling fibrosis of the lungs. The distinction between a disabling and a non-disabling fibrosis deserves our utmost consideration.

Before considering the nature of a dust it is necessary to recall the protective mechanism that nature endowed man with in order to prevent the inhalation of dust. Man lives in a konisphere world of dust. His first and his last breath contain dust. Therefore, were it not for the hair of the nose, the moisture of the nasal membrane, the ciliated epithelium of the trachea, and the hilar lymph nodes, dust would invade the lungs. Even so, because of the absence of chemical reaction most of it is incapable of setting up any proliferative reaction and remains inert or is passed out of the respiratory system.

Other factors often ignored in the consideration of industrial dusts are those of weight, particle size, concentration, and chemical nature. It must be appreciated that for a dust to be inhaled it must be extremely light, so light that it will float or remain suspended in the breathing zone of the exposed worker. It must be of minute particle size and highly concentrated. Failing to meet such qualifications, the average dust does not enter the pulmonary field.

Space forbids a detailed consideration of a number of common inert dusts such as iron dust, cement dust, fiberglas, coal dust, dust from grinding or abrasive dusts, wood dust, etc. For instance the inhalation of iron dust over a period of 8 or more years may produce a condition known as siderosis. Unfortunately the term and the x-ray markings have been confused with silicosis, an entirely different patho-

logic entity. Siderosis is a benign condition characterized by round, sharply defined opacities which result from pigmentation of the iron. No reactive fibrosis occurs, the condition by x-ray remains the same for life, and does not progress to confluent nodulation or impairment of respiratory function. The staining of the lung surface due to the iron pigment is as harmless as the tattooed nude on a sailor's chest.

Cement dust is another example of an inert dust. For some years I have examined the workers of a cement industry in this area and review annual x-ray films of these workers. These men fail to evidence any clinical signs or symptoms of pulmonary disturbance due to dust and the films remain negative even after as many as 30 years of exposure, except in a few instances of a minimal fibrosis. Furthermore, my experience is in keeping with that of the Saranac group. (1) (3).

"The Saranac Laboratory, under the guidance of the late Leroy Gardner, conducted in 1935 a survey among cement workers which was reported in its entirety in 1939. Over two thousand workers were examined, 70 per cent of whom had been employed for periods varying from ten to fifty years. Of the roentgenograms, 82.06 per cent showed no abnormalities of any kind, 17 per cent revealed a certain degree of linear exaggeration. Further analysis indicated that about one-half of this group had been exposed to dusts other than cement prior to being employed in the cement industry. No nodulations were seen in the films of those workers who had been exposed only to cement dust."

"Fiberglas (wool glass, mineral wool, etc.) is a comparatively recent industrial product and information regarding its action upon the lungs has not yet found its way into the general medical literature. The name and the physical appearance of this substance are such as to lead workers and physicians to believe that it is bound to be harmful to the lungs. Chemically, this material contains no free silica and its physical characteristics render it non-respirable. Because of the impression created by early erroneous ideas, about the harmfulness of fiberglas, extensive animal experimentation was carried out and numerous surveys of exposed men were conducted. These all

revealed no evidence of pulmonary damage."

In previous publications additional inert dusts were given consideration, but these must be ignored at this time. Suffice it to state that except for free silica dust and a few of the silicates, all industrial dusts cause *no disabling fibrosis* of the lungs. This fact is as scientifically established as the fact that pulmonary tuberculosis is not caused by the typhoid bacillus.

The untutored physician is not usually cognizant of the difference between free silica and the silicates. The explanation involves a chemical appreciation of crystallization of the "primary minerals". Silica, SiO_2 , is composed of silicate tetrahedra, SiO_4 —, a structural unit which was first revealed by x-ray. In studying the internal structure of crystals, among other things it was noted that separate SiO_4 — tetrahedra alternate in the space lattice with positively charged metallic ions in certain silicates, while others are linked together in pairs, with an oxygen ion in common. "Since each oxygen ion is shared between two different silicate tetrahedra, there are only half as many oxygen ions in the complete solid structure as the formula SiO_4 — would seem to suggest; in other words, the formula of the solid structure, extended indefinitely in three dimensions of space, is a triple infinite multiple of SiO_2 ". However, the chemistry of the silicates is not so simple as the foregoing would indicate, owing to the arrangement of the oxygen ions in the structure, for some groups possess oxygen ions which are not linked with other groups, while two ions may be shared with other groups. A chain, for instance, of infinite multiples of SiO_3 may be formed. The fibrous structure of asbestos is due to the linking of silicate groups in continuous chains.

The silicates are abundant in industry, whereas pure silica is less so. In the silicates, the silica is bound by the chemical structure so that it is not released to act as a harmful agent to the lungs. One should always differentiate between a hazard in which silica as such is present and one in which the silica is locked within the chemical structure of the silicates and is, therefore, inert. This fact must be kept in mind when one reads a chemical analysis of a substance which shows the presence of a high content of silicates, but does not reveal the actual content of the silica as such in the mineral. In fact, a chemical analysis of a material is not

satisfactory for the determination of the exact percentage of silica present.

Within the past several years we have learned that a few of the silicates when subjected to high temperatures convert the "locked up silica" or amorphous silicic acid to a cristobalite, or in some instances tridymite, forms of silica capable of producing a disabling fibrosis. Bauxite, hydrous aluminum oxide, is an example of this conversion as is diatomaceous earth. In the original (3) paper the peculiar aspects of beryllium were discussed and x-ray films were shown. This cannot be done here.

Silicosis is a disease of the lungs resulting from years of inhalation of dust containing free silica and characterized by nodulation and fibrosis. The disease is progressive. The serial films of a given case will reveal beading along the perivascular markings, diffuse nodulation, fibrosis, subsequent confluence of the nodules, especially in the upper lung fields, increase of the fibrosis and frequently the complication of tuberculosis. A few scattered nodules are not indicative of silicosis. The differential diagnosis must consider sarcoidosis, histoplasmosis, miliary tuberculosis, coccidiosis, or old primary tuberculosis. Clinically the silicotic complains of dyspnea, cough, and fatigue. The history of prolonged exposure to free silica dust, the aforementioned symptoms, and the x-ray findings of diffuse, varied-size nodulation and marked fibrosis clinch the diagnosis.

Conclusions:

1. The diagnosis of pulmonary affections due to occupational exposure involves primarily a good work history, an evaluation of the alleged offending substances and intelligent interpretation of the x-ray films.

2. The majority of all fumes, gases, vapors, or dust do not affect the lungs.

3. Concerning the dusts, it is necessary to distinguish between those which are relatively inert and those which may cause a disabling fibrosis.

4. X-ray evidence of fibrosis should not be interpreted as indicating disability. The majority of all adults have some degree of pulmonary fibrosis. It is only when the degree becomes marked that disability is to be accepted. Nodulation or pigmentation is not in itself disabling.

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PHOENIX CLINICAL CLUB MASSACHUSETTS GENERAL HOSPITAL CASE NO. 29152

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

A sixty-seven-year-old school principal entered the hospital because of loss of weight and strength.

Nine months before entry the patient noted the onset of nausea with occasional vomiting after breakfast. At the same time he developed a "bronchial" cough productive of small amounts of whitish non bloody sputum. This lasted two or three weeks, and two similar episodes occurred in the two following months. The paroxysms of cough were preceded by a tickling sensation in the throat, which he attributed to a large goiter that he had had for twenty-five years. There was no dysphagia. X-ray films taken by his physician were said to have shown four small gallstones and cloudiness at the apex of the right lung. He had been taking bile salts with some relief. During the four or five months before entry he became aware of progressive loss of strength and easy fatigue not relieved by rest. His appetite was poor, and he had lost thirty-eight pounds in weight during the previous two months. Because of midafternoon fever of 99 to 100°F., he remained in bed for two months prior to entry. Many specimens of sputum were negative for tubercle bacilli. Three weeks before admission the patient had his first attack of rapid pulse, the rate rising to 150, with associated headache and faintness. Since then he had three similar attacks, each beginning without warning and relieved by pressure on the eyeballs and carotid sinus.

He had had left-sided pleurisy twenty-five years previously, and pneumonia on the right and a suprapubic prostatectomy five years before entry. The family history was noncontributory.

Physical examination showed a well-developed but emaciated man with a dry and pale skin. There was a large, nodular, firm, but not stony-

hard, tumor of the right lobe of the thyroid gland, which extended laterally beneath the sternocleidomastoid muscle and substernally. The trachea was deviated to the left. Examination of the heart and lungs was negative. The abdomen was slightly distended; in the right upper quadrant there was a definite sense of resistance and dullness but no well-defined border could be made out. The right kidney was movable, firm nontender and neither enlarged nor displaced; the left was not palpable. Rectal examination was negative.

The blood pressure was 100 systolic, 45 diastolic. The temperature was 100°F., the pulse 90, and the respirations 20.

Examination of the blood showed a hemoglobin of 8.2 gm. and a white-cell count of 12,100 with 81 per cent polymorphonuclear neutrophils. The urine was cloudy and amber, had a specific gravity of 1.020 and gave a two plus test for albumin; the sediment contained a few red cells and many white cells. The stools were negative. A blood Hinton test was negative. The serum nonprotein nitrogen was 23 mg. per 100 c.c. A sputum examination was negative for acid-fast bacilli.

An x-ray film of the chest showed numerous areas of calcification in the region of the right middle lobe. There was scarring in the right upper lobe. A mass at the base of the right neck with calcification in its walls displaced the trachea sharply to the left and extended slightly into the chest.

By x-ray the left kidney had a normal outline. The right kidney was enlarged and there appeared to be a definite bulge with some lobulation along the lateral surface. No stones were seen. An intravenous pyelogram showed prompt excretion of the dye on the left, which outlined normal urinary passages. The middle calyces on the right were displaced medially and showed evidence of pressure defects without invasion. A retrograde pyelogram showed only partial filling of the right middle calyx.

Cystoscopy showed only a small amount of urine in the bladder. The flow of urine was extremely slight; at first the right ureter drained hazy urine followed by very bloody urine, and the left cloudy urine.

On the seventh day the white-cell count was 31,900. The temperature fluctuated between 99 and 101.2°F. Two days later an operation was performed.

DR. W. WARNER WATKINS

Sixty-seven years old! Just my age, which suggests that this unfortunate old gent might be afflicted with geriatric problems, for which solicitous friends would prescribe "Four Roses", either to smell or drink, depending on personal idiosyncrasies or former mode of life.

Apparently he has kept out of the clutches of doctors to a large degree, but not entirely so. He had a left side pleurisy 25 years ago, and five years back he had a prostatectomy and pneumonia, tho stated in reverse order in the history. Elsewhere in the record a thyroid enlargement is mentioned as dating back 25 years, apparently not bothering him very much.

Four years and a few months after the prostatectomy, the old man began to go to pieces. Nausea and vomiting after breakfast, without mention of Four Roses as a cause; three spells of so-called bronchial cough, with gallstones and cloudiness at right apex shown by x-ray; progressive loss of weight and strength, poor appetite, slight fever,—all of which kept him bedfast for the two months immediately preceding entry to the hospital. These symptoms, with sputum negative for tubercle bacilli and three attacks of tachycardia, apparently of idiopathic type,—make up the background of this case.

I felt a yen to go back to an old technic of analyzing these cases in three steps:—

First Step—On the basis of the history up to the time of the present illness, list all the possibilities suggested by these data, by classes and not by specific diseases. Chief among these would be,—

Malignancy somewhere,—either primary or secondary.

Chronic or recurrent infection,—of some type, somewhere.

Degenerative diseases of the aging,—such as chronic kidney disease, cardiovascular disease, liver degenerations, central nervous system disease.

Blood diseases,—aplastic anemia, pernicious anemia, Hodgkin's disease, and so forth.

Primary diseases of lungs, heart, digestive tract, liver, kidneys, brain.

With this list before us, and not pretending that it is comprehensive, we pass on to the—

Second Step—This is the physical examination, and the question whether it eliminates any of the above-mentioned possibilities, or adds

new ones. The physical examination found the heart and lungs negative, which will require checking by x-ray; a thyroid tumor, on right side, large, firm and nodular; abdomen slightly distended with resistance in upper segment; movable, non-tender right kidney on right, not enlarged to palpation; low blood pressure, some fever, pulse rate up somewhat.

So, what? Apparently the examiners were not greatly impressed by some of the possibilities suggested by the history. Since they had the patient under their eyes, we will defer to their judgment and delete most of the degenerations mentioned,—except possibly chronic kidney disease. We still have the malignancies, chronic infections, blood diseases and local diseases of important organs to carry with us to the—

Third Step—What do the clinical laboratory tests and x-ray examinations indicate, by way of deletion of or addition to, the possibilities? The hemoglobin of 8.2 indicates an anemia, but evidently the examiners did not give serious thought to any of the fancy blood diseases,—so we will follow their leading and forget these. Apparently there was a pyuria, so we keep the kidneys high on the list of possibilities. The normal NPN would seem to exclude any advanced chronic nephritis.

We will look at the x-rays. The chest film shows calcifications on the left which may date back to the infection with pleurisy 25 years ago. Many people develop tuberculous infection with pleurisy, recover from it and show calcification or other scarring many years later. Our x-ray survey will disclose hundreds of these, no doubt. The lobulated shadow in the region of the right middle lobe with calcification and scarring in the right upper lobe may all be one with the old left side shadows. Since this patient has two known possible sources for a metastatic malignancy, this lobulated shadow becomes important in differential diagnosis. The old nodular goitre could finally become malignant and metastasize to the lungs; the prostate removed four years back might have been malignant. With regard to the lung shadow, it is important to know its size, whether it is sharply defined or hazy at the margins, and whether the calcification is actually in it, or merely superimposed upon it on the film. Calcification can occur in other lesions besides tuberculosis, but the burden of proof would be on any one who would regard a calcifying

lesions in the lungs as anything else than tuberculosis. On the basis of the roentgenographic findings as described, therefore, the shadows would be interpreted as old tuberculosis until proven otherwise, and probably not the cause of serious symptoms. No mention is made of cardiac or aortic enlargement, so we will remove cardiovascular and active pulmonary diseases from our list,—and move downstairs.

Plain film of the abdomen showed normal size and contour of the left kidney. The right kidney is enlarged, contrary to the impression on palpation,—and shows a lobulated bulging on its lateral border. By intravenous visualization, the left kidney appears normal. On the right the middle calyces are displaced medially, so that we can safely interpret some sort of space filling lesion in the right kidney cortex, pushing out in both directions from its place of origin. The retrograde check confirmed these findings of pressure defect at area of middle calyx. The description of the urine obtained by cystoscopy is not adequate; it is said that the right ureter drained "hazy" urine and the left "cloudy" urine; what these distinctions signify is not certain. Later the right ureter drained very bloody urine. Then the white count jumped to 30,000 and the temperature rose,—and the surgeons took over.

It seems, therefore, that we have narrowed the location of the trouble down to the right kidney, and the possibilities to neoplasm or infection, or both.

Two types of neoplasm and two types of infection require consideration. Tuberculosis has to be ruled out, and we will just assume that this was done. Cortical abscess of chronic type leaking into the kidney pelvis cannot be excluded on the basis of information given. Hypernephroma or renal carcinoma of smooth or cystic type ranks high among the possibilities, and a close second would be renal cyst with complicating pyelonephritis. Time does not permit a review or analytical discussion of these possibilities, but a brief comment on cyst of the kidney will be pertinent. Several remote possibilities I cannot discuss at all, such as the metastatic lesions from thyroid or prostate.

A recent paper by Ochsner on "Cysts of the Kidney" offered some pertinent observations, among which are,—

The diagnosis is usually missed by urologist and radiologist.

They are frequent in the fifth and sixth decades.

While most frequent at the kidney poles, they are also observed in the central portion of kidney.

There is frequently a concomitant urinary tract infection.

There may be a rounded shadow merging with the kidney outline.

Deformities of the calyces in the pyelograms include displacement, flattening, abbreviation, obliteration.

Hemorrhagic cysts are sometimes found; they do not project like serous cysts and are continuous with the contour of the kidney surface. In one of Ochsner's patients with a hemorrhagic cyst the symptoms included pain in flank, nausea and vomiting a few weeks before admission, gross hematuria and a renal mass, weakness and a moderately severe urinary tract infection.

Calycine or peripelvic cysts are small cortical cavities which communicate with a minor calyx and are situated just distal to the calyces; they may be multiple or single and up to 2.5 cms. in diameter; they bulge beyond the lateral margin of the kidney.

The differential diagnosis between calycine, hemorrhagic or serous cyst with concomitant infection, cortical abscess associated with chronic pyelonephritis, and hypernephroma, is said by this writer to be difficult and often impossible. Apparently, we are expected to do the impossible in this case.

The suggestions which favor hypernephroma (carcinoma) of smooth or cystic type,—are, right age range; consistent x-ray findings, profound and progressive general effects such as loss of weight and strength, and anemia, upper abdominal symptoms which could be due to metastatic spread to liver or retroperitoneal lymph nodes, and possible lung metastasis.

Favoring cortical abscess or cyst with infection are,—long duration, the leucocytosis, the bulging both ways of a renal cortex lesion, the smooth surface contour, the pyuria.

Dabney Kerr, in discussing Ochsner's paper, emphasized the difficulty in making this differentiation from either roentgenologic or clinical findings. He said,—"It is practically impossible to tell with certainty whether one is dealing with a simple cyst or with a cystic type of renal neoplasm. . . . We work on the assumption that if there is a question regarding the identity of a

mass in the kidney, whether or not it might be a neoplasm, it must be considered a surgical problem and the patient explored and almost certainly the kidney removed."

As a practicing radiologist, I would like to climb onto that safe platform with Dr. Kerr, and pass the buck to the urologic surgeon. However, in this Club, the cervical spine is supposed to be extended into a non-retractable stance and laid cheerfully on the guillotine. Yielding to this merciless rule, I will spread my bets as follows:—

FIRST CHOICE:—Malignant neoplasm of right kidney,—hypernephroma or renal carcinoma of cystic type, with metastases to liver and retroperitoneal lymph nodes,—possibly to right lung.

SECOND CHOICE:—Cyst of kidney, calcine or hemorrhagic, with pyelonephritis.

THIRD CHOICE:—Chronic abscess of kidney cortex.

DIFFERENTIAL DIAGNOSIS

Dr. Fletcher H. Colby: It seems to me that the significant history starts with the statement that the patient became aware of progressive loss of strength and easy fatigue not relieved by rest. He also had a low-grade midafternoon fever during that time. There were episodes of rapid pulse, which I imagine were attacks of paroxysmal tachycardia associated with the enlarged thyroid gland.

On physical examination the patient gave evidence of considerable loss of weight and strength. The mass in the neck was obvious, and from the history the patient had had this mass for twenty-five years. I assume that it probably was a colloid goiter. Although there is a possibility of malignant change, the fact that the patient had had this goiter for twenty-five years makes it seem improbable. The other essential points in the physical examination are the suspicion of a mass in the right upper quadrant, the pus in the urine and the confirmation by x-ray examination that there was a mass in the right upper quadrant. X-ray examination also showed an enlarged kidney, and this is certainly better evidence of enlargement of the kidney than physical examination, because we all know how large kidneys can be and yet be missed on palpation. The intravenous pyelogram suggests trouble in the right kidney. The left kidney was interpreted as normal. This suspicion of abnormality on the right seem to be confirmed

by the cystoscopic examination, when a retrograde pyelogram made of the right kidney showed that the middle calyces were displaced medially with a pressure defect and without evidence of invasion of the calyces. So I believe that the important thing to consider in this patient is the right kidney. The evidence suggests that the mass was intrinsic in the kidney itself. The kidney outline was well known by x-ray examination and appeared to be irregular, with a definite bulge. The retrograde pyelogram indicates that this mass involved the middle portion of the kidney and displaced the middle calyx. So I think the diagnosis comes down to disease within the kidney itself. The possibility of perirenal infection seems to be eliminated. This mass on the right side, presumably the right kidney, was nontender, and one would expect perirenal infection to give tenderness.

Dr. Holmes will you be kind enough to interpret the x-ray films?

Dr. George W. Holmes: I think I had better discuss the chest film first. The mass that is described is quite evident. It lies in the upper part of the anterior mediastinum in the region of the thyroid gland and contains calcium. So the only other things we have to think of are parathyroid tumor and a calcified tuberculous node. The position is very much against the latter. The findings in the lungs are more suggestive of tuberculosis than of anything else. There is one round shadow that might be a metastasis from a tumor.

Dr. Colby: That is the one with the fairly sharp edge?

Dr. Holmes: Yes; it is not quite so dense as one would expect it to be if it were old tuberculosis.

Dr. Colby: Calcification is described in that mass. Could it not be calcification somewhere else?

Dr. Holmes: It is not impossible for a tumor to show calcification. So I cannot state whether the shadow was due to tumor or to old tuberculosis. I do not see how one can connect it with the shadow in the neck.

Dr. Colby: The calcification in the neck is probably in the thyroid or parathyroid.

Dr. Holmes: I should think that was most likely because of the position. If the calcification was in a tuberculous node, the mass ought to lie alongside the trachea or up in the neck

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itself.

In the abdominal films there is a definitely enlarged right-kidney shadow. The lobulation is not so evident as one might expect from the notes, but I think it is present. The outline of the kidney is sharp, which is against an inflammatory lesion. In an inflammatory lesion, one usually does not visualize the kidney so well. The calyces, although displaced, are not irregular, which again is against an inflammatory lesion. It apparently is deep in the substance of the kidney, so that it pushes the calyces outward, and in all probability it is some sort of tumor. I doubt that a cyst would be in this position, and I shall be surprised if it turns out to be inflammatory. The density does not give a lead.

Dr. Colby: I think it is fair to say we come to the diagnosis of an intrinsic lesion of the right kidney. This could be either inflammatory or neoplastic.

What are the possibilities of an inflammatory lesion? First of all, a cortical abscess of the kidney should be considered. This is usually associated with preceding infection, which is possible in this patient, since he had had a low-grade fever for several months. However, he should have had backache and pain and he should have had tenderness. The pyelograms in such cases vary. My experience has been that with a cortical abscess there is a definite pressure defect, either of the kidney pelvis or, more often, of the calyces themselves. The calyces are usually compressed in a somewhat orderly fashion, and one does not see the irregular defects that are apt to be associated with tumor. So I do not believe this is a cortical abscess because of the lack of tenderness, the lack of pain, the lack of backache and the pyelographic evidence.

The only other inflammatory condition I can think of as a possibility is tuberculosis. The patient's age is against tuberculosis. Patients as old as this rarely have primary renal tuberculosis unless there is a definite past history of other lesions. That does not make it impossible. However, the patient apparently had had no bladder symptoms, and an irritated bladder is the most frequent symptom of renal tuberculosis. No ulceration or inflammatory change was described in the bladder on cystoscopic examination. Furthermore, the pyelogram was not consistent with tuberculosis. One would ex-

pect to find tuberculosis in more than one portion of the kidney, and as Dr. Holmes described the pyelogram it does not suggest an inflammatory lesion.

So far as neoplasm is concerned, what is the possibility of metastatic malignant disease? The thyroid gland might have undergone malignant change, but I do not believe so, and I am going to discount that. Primary tuberculosis of the thyroid gland is rare, and if it occurs, is usually associated with miliary disease in general. Is that not true, Dr. Holmes?

Dr. Holmes: Yes.

Dr. Colby: At the Lakeville Hospital we have had only a few patients with tuberculosis of the thyroid gland.

The possibility of primary lung tumor that metastasized to the kidney should be mentioned. However, there is no real evidence that this patient had a primary carcinoma of the lung. In addition, the other systems give no lead to a primary tumor that might have metastasized to the kidney.

So we come down to the possibility of primary malignant tumor in this patient's right kidney. He had fever, weakness and loss of strength, and in our experience at this hospital these are evidence of malignant neoplastic disease somewhere. Although there is no convincing evidence of symptoms such as pain, hematuria and tumor, which are the three cardinal signs of renal tumor, these have long since been discarded as early indications of neoplasm. I cannot explain the fever except to say that it was evidence of infection. The well-marked anemia and the white-cell count of 31,000 after cystoscopic examination could have been due to the flaring up of an already present infection in the urinary tract. The kidney outline was suggestive of neoplasm, and the pyelogram indicated a tumor that involved the middle portion of the kidney. The area in the chest might have been a secondary deposit from a tumor of the kidney.

My diagnosis is a primary malignant tumor of the right kidney; and most of these tumors are renal-cell carcinomas.

CLINICAL DIAGNOSIS

Carcinoma of kidney.

DR. COLBY'S DIAGNOSIS

Primary malignant tumor of right kidney.

ANATOMICAL DIAGNOSIS

Undifferentiated carcinoma of right kidney.

PATHOLOGICAL DISCUSSION

Dr. Benjamin Castleman: At operation a large tumor (9 by 6 by 4 cm.) of the right kidney was found, which proved on section to involve most of the midportion of the kidney. The tumor was yellowish and necrotic, and microscopically shows an undifferentiated carcinoma, probably of embryonal origin. There

was no invasion of the renal vein or pelvis, although the latter was displaced by the tumor.

Dr. Colby: Does anyone know anything about the nodule in the chest?

Dr. Castleman: No. The calcification in the neck might well have been a colloid goiter; many of them have some areas of calcification.

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2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

Editorial

PRE-ANESTHETIC PREPARATION
AND ANESTHETIC MANAGEMENT
IN THE AGED

It is apparently quite true that the number of our Senior Citizens is increasing from year to year. You are all aware of this, I am sure; but a few figures may give you a better appreciation:

In 1900 one person in 25 was 65 or over.

In 1940 one person in 14 was 65 or over.

The 1950 census revealed that approximately 11½ million people in the United States are over 65. At the present rate, there will be 20 million over 65 in 1975, and 31 million over 60 years of age. There is no doubt, then, but that we shall have to concern ourselves more and more with the problems of the aged. This portion of the discussion is concerned with pre-anesthetic preparation and anesthetic management of this group.

In the pre-operative consideration of the patient, we must realize that there are certain physiologic changes which occur with increasing age. These changes occur at varying rates in different individuals. Thus, while one man's lungs may be functioning perfectly, his heart may not be. Another's heart may be as perfect as that of a healthy 30-year-old, but he may have serious nephritic or hepatic changes. Let us consider, then, how the various systems may be involved in the physiologic changes of age, and how these changes may complicate anesthesia.

In the circulatory system any of the following may exist: Cardiac hypertrophy, diminished caliber and elasticity of the coronary vessels, arteriosclerotic changes in all the vessels, or myocardial degeneration of varying degrees. We must expect a decreased cardiac reserve and watch for hypertension, heart failure, and a sluggish circulation. Coronary occlusion can be precipitated in the operating room. Faulty conduct of anesthesia may also result in thrombosis or

embolic phenomena. As examples, we may mention the danger of giving high spinals to patients with coronary artery disease and administering intravenous fluids indiscriminately to patients with relative or true polycythemia.

In the respiratory system there is usually a stiffening of the thoracic cage, atrophy of the mucous membranes of the upper respiratory tract, calcification of the cartilages, dilatation of alveoli and rupture of interalveolar septa, emphysema, and narrowing of bronchioles. With these changes there is a decreased tidal volume and vital capacity and impaired gaseous exchange through the alveolar membrane. Elimination of secretions from the respiratory tract is sluggish. The overall effect of pulmonary ageing is a state bordering on chronic hypoxia.

In the nervous system atrophy and degeneration of the cortical elements may occur, and because of this many physicians prefer atropine to scopolamine in the premedicating hypodermic. Reflexes may be diminished and sensations impaired.

Ageing of the gastro-intestinal tract and excretory mechanisms results in delayed absorption and elimination of certain anesthetic agents.

Any number of these changes may be present, or none to any serious extent. The important thing is to understand and recognize the physiologic changes of age and know how to cope with them.

This brings us to a consideration of actual anesthetic management, which may be divided into two equally important periods: Pre-operative and operative. Perhaps the most important factor in pre-operative management of the patient is a visit with him on the evening before surgery. He knows and has confidence in his surgeon, but probably has little or no idea as to anesthetist or anesthetic. And he may be reluctant to ask his surgeon about the anesthetic, lest this be interpreted as a sign of fear. With a few well-chosen words the anesthetist can often put the patient completely at ease and give him a good night's rest.

Other important things can also be accomplished at the time of the pre-operative visit: The pre-operative medication can be ordered. The choice of drugs and determination of dosage are matters of individual preference, but most anesthetists will agree that it is a mistake to apply routine adult dosages to the aged. This is readily appreciated when it is remembered

that the metabolic rate in these patients is often greatly reduced. Circulatory collapse from heavy pre-medication is not uncommon and is occasionally of such severity as to require postponement of surgery. There is considerable agreement that too little premedication is to be preferred to too much, for more can be added but none can be taken away.

Also at the time of the pre-operative visit certain pathological states may be recognized and corrected. Anemia, dehydration, and vitamin and mineral deficiencies should be looked for and treated. Digitalis is indicated pre-operatively in patients with congestive failure, and insulin for diabetics with a blood sugar greater than 150 mgm/100 cc. One must know when to suspect the presence of such obscure diseases as Addison's, myasthenia gravis, and multiple sclerosis; and more common pathological conditions such as asthma must be considered and inquired about. If the patient is an asthmatic, the anesthetist must be prepared for quick and effective treatment of an acute attack in the operating room.

Anesthetic management during surgery, again, is very much a matter of individual preference. The choice of agent is usually governed by the need for adequate oxygenation and the preservation of an active cough reflex. Any agent known to cause prolonged post-operative respiratory depression is contraindicated from the standpoint of increased incidence of atelectasis and pneumonia. If these few precautions are heeded, one may rightfully expect the older patient to tolerate both surgical procedure and anesthesia quite well.

In summary, then, we must prepare to deal with all the varying physiological and pathological states of the aged. The anesthetist can fulfill his part best by making pre-operative contact with the patient and following the path indicated by correct evaluation of that particular individual.

W.A.R.



TOPICS OF CURRENT MEDICAL INTEREST

RX, DX, AND DRS.

By GUILLERMO OSLER, M.D.

The ANTIBIOTICS have accidentally produced some odd, unfortunate situations. Part of the fault is in their use, part in the way they are used. . . . For example, a group from Duke University has reported two dozen cases of MONILIASIS—an infection of various body areas and portals which was allowed to occur because the usual bacterial flora was killed off. . . . A Los Angeles surgeon has reported the masking effect which penicillin may have on appendicitis . . . Etc., etc.

Furthermore, an editor of ARIZONA MEDICINE (W. H. Oatway, Jr.) has just won the yearly award of the California Trudeau Society (\$150) for a paper entitled "DELAYS OF THE DIAGNOSIS OF TUBERCULOSIS FROM THE INCAUTIOUS USE OF ANTIBIOTICS". . . . Forty per cent of the present population of a small sanatorium were held up for weeks to years in their start of tuberculosis therapy. Chemotherapy was used for lung symptoms, called by a variety of 'virus' names. From one to five different drugs were used, often in sequence. Chest x-rays and bacterial studies were not done when indicated. About half of the group were finally found by an incidental 'survey' x-ray. Another goodly portion had been known to have tuberculosis for years, but the antibiotics were tried for weeks or months before the activity of the lung lesion was determined. . . . The report is a good warning on the need for diagnosis, and the value of survey films and fluoroscopy.

About two years ago the regular reduction in the cost of new drugs was described in this column. . . . Merck & Co., Inc. have recently added another proof of super-honest pharmacy. Right in the midst of a CORTISONE black-market, Merck REDUCED THE COST OF Cortone for the seventh time in two years. Not cheap yet, but \$200 to \$24 is quite a decrease.

After waiting for months to hear of local TREATMENT for A-bomb BURNS, the first program turned up within a week after the hope was mentioned in print. Col. W. S. Stone, head of the Army Graduate Medical School described it in an interview. . . . It is intended to separate the cases into two groups,—one group will include those with less than 20% of the body involved by second degree burns; the other group includes those with more than 20% of the body area burned seriously. . . . Each group will receive a particular routine of treatment. The minimal group needs only the 'open treatment'; no dressings will be applied, narcotics or analgesics may be used, and antibiotics can, be used if infection threatens. . . . The badly burned group is to be treated

by application of large pressure rolls, 2 inches thick, 22 inches wide, and 30 inches long. They are composed of layers of gauze (inside), cotton batting, wood pulp cotton, and water-repellent paper (on the outside). It was developed by co-operation between the Army, Cook County Hospital of Chicago, and the Medical College of Virginia. . . . Third degree burns no larger than an inch will heal over by themselves; larger burns usually will need skin grafts.

Another reference seems indicated to a medical celebrity in Phoenix. Dr. Milton H. Erickson, neuropsychologist, has written the foreword for the LeCron and Bordeaux book on 'HYPNOTISM TODAY', second edition.

ULCER THERAPY NO. 1—A combination of antacids (aluminum hydroxide and magnesium trisilicate), water-soluble chlorophyll, and powdered okra is recommended for resistant peptic ulcers. . . . It is called 'Chloresium Powder', and is supposed to produce symptomatic relief and tissue repair. The okra makes the material very viscid and adherent. It is made by the Ryston Co. of New York.

ULCER THERAPY NO. 2—Capsules of 'Kutrol' are used to stimulate healing of peptic ulcers. . . . They contain an extract of equine pregnancy urine, including non-estrogenic factors. . . . It is combined with other methods at the start of therapy. . . . Parke, Davis & Company makes it.

ULCER THERAPY NO. 3—The literature is piling up from the use of 'Banthine'. The drug is anticholinergic, and controls the parasympathonia which usually is present with ulceration. It reduces the hypermotility and hyperacidity. . . . The side-effects are said to be moderate and often decrease with use of the drug.

NO. 4—Dr. Walter Palmer, professor of Medicine at Chicago, feels that the value of BANTHINE has been exaggerated. No drug on the horizon does more than supplement the old remedies. . . . If suppression of secretions is needed, Dr. Palmer favors vagotomy (but only for duodenal ulcers). . . . He tells of the adverse effects of ACTH on peptic ulcers, contrary to its salutatory effect on ulcerative colitis.

OKRA, incidentally, has been found to be a source of 'okra plasma', a BLOOD PLASMA SUBSTITUTE. . . . Zeit, Benjamin, and Ihrig of Marquette, in Milwaukee, have found that okra

Pods may be extracted to produce a liquid which is said to be well tolerated, and which may be obtained in powder form. . . . Storage of the powder is a great space-saver, and the last minute addition of saline solution allows its emergency use. . . . The material is a polysaccharide. It is not yet licensed for human use by the Pure Food and Drug Administration.

Transparent adhesive may come to the place where someone in 1960 will invent an OPAQUE ADHESIVE TAPE so that we CAN'T see the lesions.

The RESINS have moved from violins to industry to medicine. They have barely been started as antacids for peptic ulcer, before being recommended for REDUCING EDEMA. They start off in a fairly public way in an article in the Sat. Eve. Post. . . . The resins to be used for edema obtain their effect by desalting the alimentary tract. They attract certain ions, notably sodium and potassium, and increase the effect (and tolerability) of a low-salt diet. . . . The hazards of acidosis and hypopotassemia must be considered, but one of the drug houses already has put out a resin loaded with potassium to avoid the removal of too much from the intestinal tract.

For those physicians whose specialties do not lead them to peer into the abdomen thru a peritoneoscope, the mention of a 'CULDOSCOPE' may be news. . . . It appears (or seems) that there is a cystoscope-like instrument which may be inserted by vagina, thru the barrier of the vault and peritoneum, and into the cul de sac. . . . This allows direct visualization of the female pelvic structures. . . . It is called the Decker Culdoscope, and is made by the American Cystoscope Makers, Inc.

Big Deal! The Scherer Company announces their NEEDLELESS HYPODERMIC INJECTOR to the profession, so that we will know about it before the hoi-polloi. The same day the same information appeared in the papers. Oh, well, maybe we got it before TIME Magazine. . . . Also, unless we move to Summit or Stark County in Ohio (where it is first being sold) the 'Hypospray' will not be available for perhaps a year. . . . The spring-activated plunger forces a tiny spray of medication to a certain planned depth with scanty pain, it says here. The newspaper states that the width of the spray is 1/20th of diameter of a hypodermic needle. . . . E. R. Squibb & Sons is supplying antibiotics, biologicals, hormones, sedatives, vitamins, etc., in 'Hypofils'. . . . This slow distribution may produce an 'intrigue of scarcity', but it also may produce a series large enough for the deprived to decide if it is valuable.

The use of 'AMPINS' for hypodermic injection

of medications has been noted in advertising, and now in medical reports. Batterman and Rovenstine of New York have described the values and hazards. . . . An ampin is a disposable unit which consists of a glass ampule, a short rubber tube, and a needle. The needle shaft is enclosed in a glass cover, and the hub contains a filter. The ampule contains the medication plus 2 cc. of helium gas under a pressure of 2 atmospheres. . . . The neck and tip of the ampule is contained in one end of the rubber tube; the hub of the needle is in the other end. . . . The glass needle-cover is removed just before the medication is to be given. The needle is inserted under the skin or into the muscle as usual. The tubing is pinched and released to be sure that blood does not return from the site. The tube is then bent to break the ampule-tip, with the bottom of the ampule held upward. (This is called "activating" the ampin). The gas forces the fluid into the injection site. . . . Ampins may be used for emergency or routinely. A study of efficiency showed a marked saving of time, both for the nurses and physicians. They are most helpful in the operating room or for acute needs. . . . The hazards of a gas embolism are very scanty, even if precautions are not observed. The local effects of injection are rarely notable. The amount of glass injected is scanty and detectable by analysis, but is less than that when a syringe-needle technique is used. . . . As in all new procedures, the proof of the pudding will be found when more people eat it.

Two notes concerning ANTI-HISTAMINES,—
An asthmatic who becomes refractory or 'fast' to epinephrine may again respond after the use of an A H drug. . . . A patient with hay fever may develop asthma after the use of A H drug. . .

Complete tests by a single pill for a substance in the urine are now an accepted method. . . . It was not expected that the complicated and esoteric procedures which have been required to test for BACTERIAL SENSITIVITY TO ANTI-BIOTICS could be reduced to the use of a pill, but they have. . . . Commercial Solvents has produced 'DIA DISCS'. They are sold in pliofilm squares, and can be removed with sterile forceps. . . . The culture medium is streaked with the organism to be tested; a 'Dia-Disc' is placed on the agar surface; and the plate is incubated. Sensitivity to the antibiotic results in a lack of growth around the disc. The diameter of the zone indicates the relative resistance. . . . Discs are available in two strengths each of penicillin, bacitracin, streptomycin, chloromycetin, aureomycin, and terramycin.

ARIZONA STATE HOSPITAL

A Medical Survey of Progress and Deficiencies*

By

ERNEST A. BORN, M.D. (Prescott)
LINDSAY E. BEATON, M.D. (Tucson)

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JOHN R. GREEN, M.D. (Phoenix)

The following information was obtained following complete investigations of the Arizona State Hospital from March 7-14, 1951, and compared with the thorough survey made by Dr. Grover A. Kempf in 1938 and the next and most recent study made by Riley H. Guthrie, M.D., Chief, Hospital Services Section, National Institute of Mental Health, just one year ago (March 13-19, 1950.)

1. *Definite progress* is obvious in spite of the increased overcrowding of patients due to the growing population of the State of Arizona, and deficiencies of staff and facilities due to inadequate budgetary appropriations to compensate for the increased needs. This reflects well upon the administration of the Board of Control and the Hospital Superintendent.

1. More staff physicians, nurses, psychiatric social workers, occupational therapists, clinical psychologists and specialized consultants have been working at the Arizona State Hospital during the past year than at any time in its history. This is a major factor in the development of a more effective treatment program. Deficiencies are still present, the major obstacle being a financial inadequacy.

a. The number of full-time *physicians*, apart from the Superintendent, has varied widely since 1941. In 1941 there were 3 doctors; in 1947 there were 5; in 1950, 9; and at the time of this survey there were 10 physicians.

b. A *neuropsychologist* assumed his duties as Director of the Laboratory of Neuropsychology and Clinical Medicine in October 1950. This department is one of the few in existence in state mental institutions in the United States, and promises to be a stimulating influence. Autopsies are now being done at the Arizona State Hospital.

c. The number of *graduate nurses* has been increased from 11, in 1949, to an all-time high of 22 at the present time. During the past year Miss Alva Aber, R.N., has assumed duties as Director of Nursing. She holds a Master's degree in Nursing Education from Columbia Uni-

versity and is in the process of a complete reorganization of nursing services and has made arrangements to teach student nurse affiliates from other nursing schools. This program should prove to be one of the most stimulating features of the entire treatment schedule.

d. A full-time *Clinical Psychologist*, who holds a Master's degree in Psychology, and who is working on a thesis for his doctorate, assumed his duties during the past year. He has a staff of 6 *senior psychology students* from Arizona State College who are gaining experience in interviewing and testing on patients under his supervision.

e. *Three full-time social workers* are now employed, in comparison to one until this past year. One of these workers spends the majority of her time visiting patients and families extramurally.

f. *Two occupational therapists* are now directing the work of psychiatric patients in one unit, and of neurologic patients in another unit. A limited program of physical education and training is carried out by the assistant occupational therapist. No such assistant has been employed in the past.

g. To facilitate active treatment, more *consultants* have been called in from Phoenix during the past two years than at any time in the history of the hospital.

2. Emphasis has been increased on treatment and research rather than on custodial measures.

a. The *Neuro-Surgical Unit*, comprised of qualified Phoenix specialists, under the direction of one of us (JRC), with administrative offices in the Hospital Building, carries out diagnostic studies, upon the request of the Hospital staff, to determine the presence or absence of organic diseases of the nervous system. These studies include physical, neurologic, psychiatric, spinal fluid, x-ray (including pneumo-encephalography, ventriculography, and arteriography,) and electro-encephalographic examination. Other consultants are requested as indicated. Management is recommended in out-patients and voluntary admissions are cared for. Psychosurgery and other neurosurgery, including the surgical

*Subcommittee on Mental Health, Arizona State Medical Association.

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treatment of focal epilepsy, is now available under well controlled circumstances.

This Unit sponsors a monthly clinicopathologic conference on the first Wednesday of the month, which supplements the daily staff conferences of the Hospital staff.

During the past year this Unit has received national recognition for original work done in the field of Psychomotor epilepsy:

- (1) March 1950—Symposium on Psychomotor Epilepsy, at a joint meeting of the American Academy of Neurology and International League Against Epilepsy, Cincinnati, Ohio.
- (2) June 1950—Symposium on Clinical and Electrical Aspects of Temporal Lobe Disorders, at the American Electroencephalographic Society, Atlantic City, N. J.
- (3) December 1950—Electrocorticography in Psychomotor Epilepsy, at the Western Society of EEG, Reno, Nevada.
- (4) An invitation has been extended, expenses paid, to take part in the Western Institute on Epilepsy, in June 1951, Salt Lake City, Utah.

Two scientific publications have been accepted by the publishers and are now in press.

- (1) Focal Epilepsy of Psychomotor Type—Journal of Neurosurgery.
- (2) Electrocorticography in Psychomotor Epilepsy—Electroencephalography and Clinical Neurophysiology.

Both publications are by Green, John R., Duisberg, R. E. H., and McGrath, W. B.

b. *Psychiatric treatment* facilities have expanded during the past year. One year ago, standard electroshock convulsive treatment, hydrotherapy and sedation were the principal therapies. An *insulin coma* department under competent psychiatric and nursing supervision is now in operation for the first time since it was curtailed by war shortages. Two new *Reiter stimulators* of the latest type have been added this year for convulsive and subconvulsive treatments. *Sodium pentothal narco-synthesis* interviews have been increased for diagnostic and therapeutic purposes.

Wards for the care of syphilis, including treatment with malaria, tuberculosis and children with various types of cerebral palsy have been reorganized during the past year and are under much better control than in the past, in spite of limited physical facilities.

Voluntary and ancillary workers have been solicited during the past year. Gray Ladies and the Unitarian Church group are being organized to actively aid the hospital with volunteer work, under the direction of Dr. Robert Lentz, the Clinical Director.

A *limited out-patient service* has been established during the past year, both by the Hospital Staff and by the Neuro-Surgical Unit. All hospital and consultant facilities are available, but the limitations are obvious. The fact that there has been an increasing number of *voluntary admissions* to the Arizona State Hospital during the past several years is an indication of the change in emphasis from custodial to treatment facilities. A new high of 19 voluntary admissions was reached during February 1951, with an average of 15 per month during 1950.

3. The Florence Branch, opened several years ago, during the administration of Drs. John A. Larson and Jeremiah Metzger, has been considered unsuitable and uneconomic. The Legislature, backed by the Guthrie report of 1950, urged the evacuation of this Branch as soon as possible. This was carried out during 1950. It centralized the operation of the state mental institution, but it intensifies the need for increased facilities. This increases the hospital population by 350 patients.

A new receiving building is now under construction. This will eliminate the need of using the hospital building for admission purposes and will provide a segregated area for observation of voluntary and committed patients, a sorely needed facility. It is expected that this construction will be complete by the Fall of 1951. It adds only 75 beds.

A new laundry and five new cottages for physicians were completed during 1950.

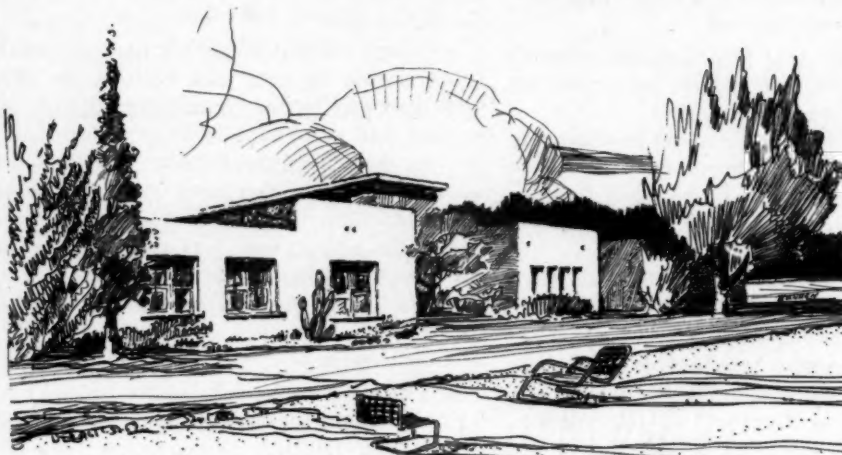
4. Progressive legislation passed this year for the benefit of the State Hospital includes: (1) A new commitment law, and (2) waiving of basic science requirements for State Hospital physicians.

It is obvious, therefore, that the principal gains made during the past year have been from the standpoint of administration, personnel and treatment, without appreciable changes in the physical plant.

II. *Existing deficiencies* are also obvious in spite of the efforts of the Hospital Administration. These deficits are felt to be due largely to public apathy which in turn is secondary to

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lack of mental health education and demand for adequate care for the mentally ill.

We hope that this report will give support to the Hospital management and offer constructive criticism to the end of obtaining a model mental institution for the state of Arizona.

The shortcomings are in two major categories:

1. Building facilities
2. Personnel

A beautiful hospital building offers nothing without adequate personnel, who create the spirit of the hospital; and, in turn, overcrowded, dismal, inadequate surroundings discourage the best of personnel.

1. *Building facilities* are dangerously inadequate. The rated capacity of the Arizona State Hospital is 919 beds. At this time there are 1592 patients occupying this space. The additional facilities created by the opening of the receiving wards (75 beds) and by the transfer of 50 children to the Arizona Children's Colony when it opens this next fall, will still leave a present need for 548 beds. This, of course, provides only for the existing problem and does not take into consideration the increasing numbers of people who will need such care.

Many states provide for 5 mental beds per 1,000 civilian population. On this basis Arizona would need 3,685 beds under ideal circumstances. Certainly definite plans should be made to increase the existing facilities by 500 beds during the next year, and another 1,000 beds during the next 5 year period.

A detailed 5 year building program has been prepared by the present administration to accomplish the needs and to meet the requirements for approval by the American Psychiatric Association. This has been submitted to the Interim Committee of the Legislature, in 1950. It has been reviewed, in detail, by this Committee, and is commended to the people of Arizona for adoption. (A copy of this program is attached.)

2. *Personnel*: This Committee commends the Board of Control and the Hospital Administration upon their accomplishments and has confidence that the correct reorganization of the State Department of Health, Welfare and Correction will be able to expand and to complete the objectives to establish a model mental institution.

The tremendous turnover of personnel at the Arizona State Hospital during its history is dis-

couraging to any type of treatment program. It is felt that the reasons for this turnover are: (1) Political, (2) poor surroundings and facilities, (3) lack of security, (4) lack of incentive to make a career of institution work, and, in some cases (5) poor selection of personnel. Fortunately, the first consideration is no longer of importance. The remainder of the factors listed are still present, to varying degrees.

a. A *state civil service or merit system* should be established which would prepare specifications and duties in all categories of positions, provide for promotions and retirement, and encourage employees to make the State service their career.

b. A *skilled personnel officer* should be employed full time by the Arizona State Hospital. He or she would be of invaluable help in the recruitment and selection of personnel, settling grievances, maintaining discipline, training programs, and public relations in general; under the overall direction of the Superintendent.

c. The position of *Assistant Superintendent* should be filled as soon as a qualified man is available.

d. More well qualified physicians are necessary to carry on the required amount of work. According to the American Psychiatric Association standards, one physician is essential for 200 resident patients, and one for each 100 admissions per year. In order to fulfill these requirements, the Arizona State Hospital should have 15 physicians, in addition to the Superintendent. *Five more qualified physicians are needed* in addition to the 10 now on duty, assuming that all ten of these doctors are actively engaged in the management of patients.

e. A committee rotated among various members of the Staff should be established to carry on the business of the Staff meeting each morning, thereby releasing the majority of the medical staff to ward duties. An increased staff is essential to the efficient operation of the Staff business and ward operations simultaneously. Under existing circumstances, it is apparently the ward work that suffers.

f. *More graduate nurses are also needed.* 25% of the nursing personnel should consist of graduate nurses. This would mean 54 graduate nurses, instead of the all time high, at present, of 22.

g. With accomplishment of needed increase in medical and nursing personnel it is recommend-

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ed that *proportionate expansion of ancillary services* should follow.

h. A modernization of the handling of *medical records* is indicated, in order to conform to the standards of the American College of Surgeons.

i. *Training programs* for student nurses, attendants, technicians, and college students in various departments should be intensified.

j. *Library facilities* for physicians, nurses, attendants, and also for patients should be established.

III. Summary of Recommendations.

1. Adoption and completion of the 5 year building program which was submitted in 1950 by the Hospital Administration to the Interim Committee of the Legislature.

2. Formulation of a State Civil Service and merit system for employees.

3. Employment of a trained personnel officer by the Arizona State Hospital.

4. Appointment of a qualified Assistant Superintendent.

5. Employment of qualified and active physicians to meet the minimum quota of 15, in addition to the Superintendent, set by the American

Psychiatric Association.

6. Employment of sufficient registered nurses to meet the American Psychiatric Association standard of 25% of all nursing personnel, a minimum quota of 54 registered nurses.

7. Increase of ancillary services proportionate to increased medical and nursing services.

8. Definite training programs for all personnel.

9. Improved medical record and library facilities.

IV. *Conclusions:* We commend the Hospital Administration, and particularly Dr. Bruce D. Hart, Superintendent, on the progress that has been made during the past year, despite adverse circumstances. Existing deficiencies are emphasized and constructive criticism is offered. We consider it to be the duty of each citizen of the State of Arizona to insist upon adequate facilities for the care of the mentally ill, both for humane and economic reasons. This Committee pledges its support of this program to the Department of Health, Welfare and Correction, and is confident that its successful completion is attainable in the near future.

ANNUAL REPORT, INDUSTRIAL RELATIONS COMMITTEE

This committee began its duties on June 1, 1950. It consists of five members, four of whom were carried over from the previous year and one new member. Meetings were held once a month in Phoenix, some of them with the Industrial Commission and some of them by the committee alone, considering matters brought to its attention by the Commission.

Following the meeting of this group, functioning as the Industrial Relations Committee, it was picked up by the Industrial Commission as the Medical Advisory Board. In this capacity it held one meeting which lasted one or two days. Industrial injury cases were sent to this Board by the Industrial Commission. Examinations were made and recommendations as to disposition given to the Commission.

When acting as the Industrial Relations Committee, we were asked to review many files in order to determine fair fees for doctors' services. We found that the Fee Schedule of the Industrial Commission did not include all of the procedures for which doctors billed the Commission. In order to arrive at fair and equitable

charges, it was sometimes necessary to consult the Blue Shield fee schedule as well as schedules from California, New York and Illinois. We recommended to the Commission that their Fee Schedule be brought up to date with fee revisions where indicated. We also advised that the new Fee Schedule be much more complete with the various procedures coded. A new schedule will entail a great deal of work but should be ready in the near future.

During the preceding year we recommended that injury cases who did not improve as expected should have neuropsychiatric evaluation. This program bogged down for several reasons and routine referral of such cases by the Commission is not being made. We would like to bring to the attention of all physicians doing Industrial work, the suggestion that neuropsychiatric consultation be asked of the Commission when recovery is not prompt. This applies particularly to back cases.

On March 13, 1951, some of the members of the Industrial Relations Committee were able to meet in Phoenix with Dr. J. F. McCahan,

assistant secretary to the Council on Industrial Health of the American Medical Association. Dr. McCahan stopped in Phoenix while making a field trip through the Southwest. He urges that doctors doing industrial work make themselves familiar with the plants for which they render medical services. He felt that all concerned would benefit by the doctors familiarity with both industrial and health hazards. He also felt that anything we could do as doctors working with management to help improve the health of employees and their families, would help prevent the Federal Government from moving in on this particular phase of medicine.

Respectfully submitted,

Carl H. Gans, M.D., Chairman

Charles W. Sult, Jr., M.D.

Ronald S. Haines, M.D.

Joseph P. McNally, M. D.

John R. Schwartzman, M.D.

***REPORT OF LEGISLATION COMMITTEE CHAIRMAN**

The Legislation Committee of our Association sponsored three bills for introduction in the First Session of the Twentieth Legislature of this State. These were:

1. H.B. 83, An Act creating an Anatomy Board; providing for the disposal of dead human bodies for scientific purposes, etc.

2. H.B. 84, An Act relating to Public Health and providing for the vivisection of animals.

3. H.B. 85, An Act relating to the Basic Sciences and the Practice of Medicine, providing exemptions, etc.

For the first time this year Council provided funds in the Budget of Appropriations for use by this Committee for the purpose of research in the preparation of our bills and the employment of personnel in the preparation and promotion of our program. Mr. Edward Jacobson, prominent Phoenix attorney, prepared these measures in proper legal terminology; and served very effectively in liaison between our Central Office and the members of the Legislature.

Two of our bills, one relating to the creation of an Anatomy Board and the other to the Basic Sciences and the Practice of Medicine, successfully passed the House and Senate, while that relating to vivisection of animals passed the House, only to be reposed at the close of the Session in one of the Senate committees. There was an avalanche of opposition from interests

both inside and outside the State to this measure in the Senate and to the Governor, and no amount of pressure or effort could extricate the bill from the Senate committee.

Representatives of our Committee, the Council, some members of the Maricopa County Legislation Committee, and the Executive Secretary appeared in open hearing for over three hours in the afternoon of February 21, 1951, before the House of Representatives in protest of the proposed amendments to the Naturopathic Practice Act wherein members of this group of practitioners wished to expand their practice to permit of the prescription of substances of plant, animal or mineral origin as are naturally found in and required by the human body, herbs, cell salts, plants, roots, barks, mineral and vegetable oils, antiseptic, germicidal, and bacteriostatic agents, non-habit forming anodynes and vitamins, and to do simple minor surgery and natural obstetrics. Mr. Jacobson represented the Association as its spokesman and performed his duty in a dignified and effective manner. Our efforts blocked enactment of this piece of legislation.

The Council of our Association acted upon the bill sponsored by a group of legislators serving as an Interim Committee of both Houses of the Legislature who, with the help of experts in the field of economy in state government, presented the reorganization bill relating to Public Health, Welfare and Correction, H.B. 46. With full knowledge of an expected unprecedented approval of this bill on the part of the members of both Houses and the Governor, no effort was expended by this Committee to amend the bill, except to send copies of the following resolution to key Committee Chairmen in both Houses:

Whereas, The provisions of H.B. 46, State of Arizona, Twentieth Legislature, Regular Session, have been read and discussed at a meeting of the Council of the Arizona Medical Association on January 21, 1951, and

Whereas, It is evident that under the provisions of said H.B. 46, the Director of Public Health would become a staff member of the Commissioner of the Department of Public Health, Welfare and Correction, a political appointee, and

Whereas, The administration of public health measures should always be free from many possibility of political pressure, now therefore

*Report of Legislative Committee condensed.

Be it Resolver, That the Council of the Arizona Medical Association hereby registers its disapproval of proposed H.B. 46 as it relates to the Department of Public Health, and

Be it Further Resolved, That the Department of Public Health of the State of Arizona be not included in H.B. 46 but that it continue to be a separate Department of the State of Arizona, and

Bt it Further Resolved, That the action of this Council be made known to the Committees of Public Health of both Houses of the Twentieth Legislature of the State of Arizona, as well as to the public of the State of Arizona through the press, and

Be it Further Resolved, That in the opinion of the Council of the Arizona (State) Medical Association the above suggested revisions are necessary in the interest of the protection of the health of every citizen of the State of Arizona.

Through action of approval by the Council, your Legislation Committee gave active support through personal interviews and letters to the following measures which were introduced:

1. H.B. 53, An Act relating to Nursing and to provide for examination, licensure and regulation of persons who practice nursing.
2. Sub. H.B. 192, creating an Arizona Youth Authority.
3. S.B. 88, creating a Board of Physical Therapy Examiners and prescribing powers and duties.
4. Approved expansion of the activities of the State Department of Public Health as pertains to the State Laboratory.
5. H.B. 93, relating to Mentally Ill Persons, providing for procedure for their apprehension, detention, and commitment to the State Hospital.

The Committee wishes to express its appreciation to Mr. Jacobson, members of the Council, members of the Maricopa County Legislation Committee, the Executive Secretary, and others of our Association who gave of their time in the interest of sound health legislation.

Jesse D. Hamer, M.D.
Chairman

REPORT OF COMMITTEE ON MEDICAL DEFENSE

Annual Meeting 1951—Council, April 29, 1951;
House April 29, 1951.

Committee members: O. E. Utzinger, E. A. Born, F. W. Knight.

1. Since the annual meeting of May 1950, \$817.20 has been expended on two cases of alleged malpractice filed against Society members.

2. There are at the present time of record, ten cases in various stages of litigation.

3. The Medical Defense Fund, now the "Reserve Fund", is at present \$39,591.20, \$36,000.00 in bonds, \$3,591.20 in cash. This is a gain of \$156.58.

4. At the 1950 Annual Meeting among other items the following was approved by the House: "that in the case of suits filed for alleged malpractice occurring subsequent to December 31, 1949, legal counsel be furnished by the Medical Defense Committee if deemed necessary, on the request of the defendant physician and his counsel, *with the approval of the Medical Defense Committee*, such cost involving current cases of alleged malpractice to be financed from the interest derived from the bonds."

Your committee would like very much to have clarified by the House the above quoted portion of the adopted resolution. For several years the members of the Medical Defense Committee have routinely approved the expenditures on all cases that have been sent to us by the central office. We have never investigated a single case, nor are the three present members of your committee, all living in outlying and sparsely populated counties, in a position to properly judge which cases should or should not be "deemed necessary" for defense. It would seem to be necessary that either all cases be approved regardless of merit or else that a proper court of inquiry be set up to investigate each case.

5. The Medical Defense Committee recommends: a. That the one dollar yearly deduction per member for medical defense be continued: b. That the Medical Defense Fund (Reserve Fund) be for medical defense solely, the purpose for which it was originally intended.

O. E. Utzinger, M.D.
Chairman

ANNUAL REPORT OF THE PROFESSIONAL BOARD ARIZONA MEDICAL ASSOCIATION 1950-1951

Meetings of the Professional Board were held in Tucson on September 10, 1950 and in Phoenix on February 25, 1951. The membership

of the Board attended in a satisfactory manner.

The Seminar program this year was limited to a Fall series on "Defense Against Atomic Warfare." This program was presented not only in Maricopa and Pima, but also in the outlying counties. Expenses for this amounted to \$932.11 for separate meetings from September 11, 1950 thru October 22nd, 1950. It is of interest to note that this was one of the very first of the so-called defense measures undertaken by any group in the state. It is suggested by the Seminar Committee and the Board that next year's program continue the custom of having seminars conducted by members of the Colorado Medical School Faculty as in previous years.

The subcommittee on Maternal and Infant Welfare is gathering together a fair-sized number of death certificates of mothers for the year 1950. The survey of these is felt to be a potential source of information, and questionable diagnoses will be further investigated by forms mailed to the attending physician.

The Hard of Hearing program continues to function with increased efficiency. School surveys are continuing in Maricopa, Pinal, Yuma and Gila counties. Courses for speech defects are being planned at the University of Arizona and State College for the coming summer. It seems manifest that the enthusiasm for this program, engendered by the work of Mrs. Lydia Newton and the Chairman of our committee, Dr. Joseph M. Kinkade, has launched a very wide-spread and very successful program in the state.

The subcommittee on Tuberculosis made a survey of all physicians in the State of Arizona who had pneumothorax equipment in their offices and would be willing to care for ambulant cases discharged from the sanatorium. A very excellent response was received and the information turned over to the medical director of the State Tuberculosis Sanatorium. The committee has drawn up recommendations in regard to the tuberculosis situation in Pima County, and has been active in all organizations interested in tuberculosis treatment and control.

The subcommittee on Mental Health has been extremely active and has been assigned a difficult task. There has been a very close observation and a very active cooperation by the members of this committee with the Arizona State Hospital. Improvements in many lines have become apparent as a result, or certainly

concomitantly. The committee has met with the superintendent of the State Hospital to investigate charges made by a recently discharged employee, a physician who gave the hospital much adverse publicity thru the medium of a front page story in the Phoenix papers. The investigation revealed that this publicity was uncalled-for and that the charges were unfounded. The committee continues its endeavors to improve the commitment procedure in the State of Arizona, and at last has had a bill passed establishing more up-to-date methods. This sub-committee was presented the problem raised by the Arizona Psychological Association which requested the state societies reaction to the problem of licensure of or registration of psychologists within the State of Arizona.

The subcommittee on Cancer has continued to cooperate with the American Cancer Society, not only thru its educational program, but also thru its operation of cancer clinics and detection centers.

The Venereal Disease Committee was extremely active in sponsoring educational programs thru all media, including radio, newspaper, and talks before civic and lay groups.

Many miscellaneous problems have been presented to the Professional Board for clarification, study and recommendation. The committee has cooperated with the Public Health Department, in the person of Dr. Ward, and has lent its support to his urgent request for better reporting of communicable diseases. Communications have been received from diabetic control organizations, industrial hygiene and health organizations and from many other national groups, as well as from state organizations requesting information and cooperation. These matters have been given consideration and appropriate action was taken. The Professional Board has recommended to the Council action with respect to the education of Arizona medical students in out-of-state universities.

The Board respectfully recommends:

- I. That seminars be continued in the outlying counties with adequate budgetary consideration being given for such seminars.
- II. That this board be increased by one more subcommittee to be known as General Medical Subcommittee which might act on the problems of geriatrics, industrial health, diabetes, and other such specific national health movements more effectively.

- III. That the council recommend to the State Legislature some program for the support of Arizona medical students in out-of-state schools by subsidy to those schools, much as is done in other states without medical institutions of learning.
- IV. That there should be an active campaign of publicity to counteract the inept anti-medical antivivisection advertising which has appeared in the daily press and circulars.

Respectfully submitted,
Arthur J. Present, M.D., Chairman
Professional Board
Arizona Medical Association

INDUSTRIAL HEALTH CONFERENCE

ACTH, CORTISONE COMBATS NEW PULMONARY DISEASE

Successful application of the new drugs, ACTH and cortisone, in retarding the deadly effects of a new pulmonary chest disease, chronic berylliosis, was described today before the American Association of Industrial Physicians and Surgeons by Dr. H. E. Tebrock of Sylvania Electric Products, Inc.

Citing chronic berylliosis as a disease resistant to most forms of therapy, Dr. Tebrock said that nearly all types of treatment have been tried in the past with improvement rarely noted. In one area, of 86 cases treated, 24 died, 31 were totally incapacitated, 17 could continue work only on a limited basis, and there was no assurance that the remaining cases were permanently cured.

The disease, which attacks the lungs and occasionally other organs, is believed to result from small amounts of beryllium, which are present in some industrial chemical compounds, entering the body and being released through the tissues in minute amounts.

When ACTH was first tried, the patients showed more improvement than from any previous treatments. After several cases were treated with ACTH, it was decided to try cortisone to offset undesirable side effects from the treatment. This proved equally satisfactory, Dr. Tebrock said.

"We hope to retard or prevent the progression of the disease to a more fibrotic state by the use of the drugs," he declared. "We are making no claims, but we feel that the apparent symptoma-

tic improvement, in the sense of well-being induced by this form of treatment, has warranted its use so far."

Dr. Tebrock cautioned, however, that ill effects might result from the continued use of the drugs. He said that the possibility of adrenal and pituitary atrophy must be considered.

700 PHYSICIANS OPEN FIVE DAY SESSION ON INDUSTRIAL MEDICINE

Nearly 700 of the medical men responsible for keeping American workers safe and healthy in their jobs convened here today to discuss their work and its relation to the nation's defense effort.

Attending the five-day conference of the American Association of Industrial Physicians and Surgeons are health leaders employed by business and industry to guard the physical welfare of employees. The association's meeting is being held in conjunction with the 1951 Industrial Health Conference attended by 2000 physicians, dentists, nurses and hygienists.

A major subject for discussion will be the role of industrial medicine in civil defense. A two-hour program on this subject will include reports from Brig. Gen. Otis B. Schreuder, USAF, and Commander E. Richard King, USN.

The convening medical men will also deal extensively with the medical and economic problems of retirement of employees.

A total of 16 papers dealing with civil defense and industrial illnesses and accidents will be presented at conference sessions. Additional discussions of specific problems will be held at special sectional meetings.

The association will participate in a joint meeting of all the industrial health organizations on April 25. The entire session will be devoted to "New Developments in Industrial Health" and "Teamwork in Control of Occupational Diseases."

The latter program represents the first comprehensive report on the cancer control program developed by Standard Oil Company (New Jersey) for the protection of its employees and the employees of its affiliated companies. Its results will be outlined by four physicians and one industrial hygienist engaged in the program.

PERSONAL NOTES

Drs. Paul Armour, Donald Carlson, Clyde Barker, Jr., Lucille Dagres, and Roland Hussong, of Phoenix, attended the American Academy of General Practice, Scientific Assembly, San Francisco, California, March 19-22, 1951.

Paul M. Roca, Phoenix attorney, addressed the March 19th St. Monica's Hospital Staff Meeting on "Medico-Legal Problems."

Dr. Paul Case, Phoenix, reported a "Case of Sympathetic Ophthalmia Treated with ACTH", at the March 26th Good Samaritan Hospital Staff Meeting.

Dr. C. Wm. Weisser, of Pittsburgh, Pennsylvania, and Dr. Howard Morrison, Omaha, Nebraska, addressed the March 26th Good Samaritan Staff Meeting on "Specificity in Ophthalmic Therapy."

Two cases were presented of "Periarteritis Nodosa and Diffuse Collagen Disease" by *Dr. Albert Eckstein, Phoenix, at the Good Samaritan Hospital Staff Meeting, March 26th.*

Dr. James M. Owens, Phoenix, has moved his office to the Professional Building.

Dr. E. E. Reddick, Phoenix, has resigned as Director of Local Health Administrator, with the Arizona State Department of Health, to become Co-ordinator of Local Health Services in Kentucky. He has moved to Louisville, Ky.

Dr. Clarence G. Salisbury, Phoenix, will become the first Commissioner of Health, Welfare and Correction. His department is to be activated July 1st. He has been Chief of the Bureau of Preventive Medical Services in the State Health Department.

Dr. William G. Furth, Phoenix, has volunteered for duty and left his practice in Phoenix to join the U. S. Air Force Medical Department. His basic training will be taken at Randolph Field, Texas.

Dr. Wallace Meyer, Phoenix, spoke before the April 9th St. Joseph's Hospital Staff Meeting on "Lymphoblastoma of Anus and Rectum."

The April 16th Staff Meeting at the newly named "Memorial Hospital"—formerly St. Monica's, was filled with "A Case of Abscess of the Epiglottis"—presented by *Drs. Jerome Kaye and John Kruglick, Phoenix. This was discussed by Dr. Jack Brooks, Phoenix. The meeting was concluded by a presentation of "Diagnosis and*

Treatment of Hip Disease in Children" by Dr. Raye Fife, Phoenix.

Dr. Burnett, of Southwestern Medical School in Texas, spoke before the Osler Club in Phoenix, April 19th on "Acute Urinary Suppression and its Treatment."

Dr. Raymond Huger, Phoenix, spoke on "Meckels' Diverticulum", before the St. Joseph's Hospital Staff Meeting May 14, 1951.

Dr. Thomas Bate, Phoenix, was elected President-elect of the Arizona Medical Association at its 60th annual meeting in Tucson, Arizona, April 29th-May 2, 1951.

Dr. Kent Thayer, Phoenix, was elected Councilman at Large.

Dr. M. J. Whitelaw, Phoenix, is presenting several papers in Atlantic City, New Jersey, June 1951. He is presenting an A.M.A. exhibit on "Cortisone and ACTH in Burns." Before the American Society for the Study of Sterility, he speaks on "Some Concepts in the Physiology of the Basal Body Temperature Pattern." Before the Association meeting for the Study of Internal Medicine, he is presenting "Observations on the Use of Oral Cortisone and ACTH in the Open Treatment of Burns", and "Clinical Observations on the use of ACTH in the Peripheral Bed." With Dr. Stahnke of Tempe, he is presenting "Effects of ACTH in Scorpion-Neuro Toxin."

Dr. Whitelaw wishes to point out here that his experiments with Dr. Stahnke indicate that the use of ACTH in rattlesnake and blackwidow spider bites is contra-indicated, in spite of the fact that Armour and Co. have literature published which recommends its usage. Rats are put into convulsions by ACTH following rattlesnake and blackwidow spider bites.

At the May 16th Staff Meeting of Memorial Hospital, *Dr. H. L. Williams, Phoenix, spoke lengthily on "Common Anorectal Disorders." Dr. Thomas Read, Phoenix, presented a "Primary Carcinoma of the Lung Following Breast Carcinoma."*

Dr. Marcy L. Sussman, Phoenix, spoke before the 69th annual session of the New Mexico Medical Society, Santa Fe, New Mexico May 4, 1951, on "Obscure Gastro-Intestinal Bleeding" and "Non-Tuberculous Disease of the Lungs."

Drs. D. W. Melick and C. T. Read, Phoenix attended the meeting in Atlantic City of the American Association for Thoracic Surgery on April 16th, 17th and 18th.

On-April 19th-*Dr. Melick appeared before the*

American Board of Thoracic Surgery in New York City to take the second and final part of the examination for certification by this Board. He has since been informed that he was successful in passing the examination.

Dr. George S. Enfield, Phoenix, recently has been certified as a Fellow of the American College of Anesthesiology.



EXECUTIVE SECRETARY F. G. MITTEN

Appointed to fill the newly created post of executive secretary to the Maricopa County Medical Society is Frederick G. Mitten, former New York publicist and advertising agency executive.

ARIZONA ASSOCIATION OF PATHOLOGISTS & RADIOLOGISTS

At its meeting of April 29, 1951, the Arizona Association of Pathologists and Radiologists voted to disband to allow the organization of separate organizations for the radiologists and the pathologists. It was felt that the number of radiologists and pathologists had increased sufficiently to make this move advisable. The radiologists re-organized as The Arizona Radiological Society and elected the following officers: President—Dr. Maurice Richter, Phoenix, Arizona; Vice President—Dr. Herbert D. Welsh, Tucson, Arizona and Secretary-Treasurer, Dr. R. Lee Foster, Phoenix, Arizona. The pathologists organized the Arizona Society of Pathologists with the following officers: President—Dr. George O. Hartman, Tucson, Arizona; Vice President—Dr. O. O. Williams, Phoenix, Arizona and Secretary-Treasurer, Dr. Ralph H. Fuller of Tucson, Arizona.

R. Lee Foster, M.D., Secretary

WOMAN'S AUXILIARY

ANNUAL REPORT OF THE WOMAN'S AUXILIARY TO THE ARIZONA MEDICAL ASSOCIATION

As President of the Woman's Auxiliary to the Arizona Medical Association, I wish to send greetings to the President, Mrs. Herold, and to all National officers, from the Auxiliary members in Arizona.

The following is a report of the 1950-1951 activities of the Auxiliary:

Organization: The current membership is 350, an increase of ten members over the preceding year. Organization is still confined to the four counties, Pima, Yavapai, Maricopa and Gila. There are 32 members at large.

Programs: The program chairman at all times urged the county groups to plan varied and interesting programs along the lines suggested by National, and also recommended the need to study legislative issues. Self-education on all phases of compulsory versus voluntary health insurance, which would lead to a more enlightened membership, was stressed, as well as the furthering of friendly relations between the Auxiliaries and other organizations.

Public Relations and Health: Public Relations and Health Chairmen and the Auxiliary President were privileged to meet with certain of the public relations committee of the State Association last summer for the purpose of planning a program wherein the Auxiliary could best help the Association in furthering public relations projects. After much discussion, two courses of action were agreed upon. First, to assist the Association with the endorsement drive started by it some months previously. Second, to urge each county auxiliary to do its utmost in shouldering civic responsibility in its own community, with special emphasis on health problems. Letters and literature were sent to numerous organizations with the suggestion that a study be made of the issue of compulsory versus voluntary health insurance, with the hope that understanding would bring a resolution in favor of medicine's stand. The controversial nature of the subject and, in some instances, by-laws prohibiting groups from acting officially on such questions, particularly

where there was a national affiliation, presented many difficulties. The following organizations did pass resolutions and these are filed in the Chicago office of the American Medical Association: Tucson Chamber of Commerce, Globe Parent-Teacher Association, Business and Professional Women's Clubs of Yuma, Bisbee, Kingman and Tucson.

We have done constructive work in presenting the problem of compulsory health insurance to the American Association of University Women and the Parent-Teacher Association groups on the local scene. Proper officers were contacted, kits especially prepared by Whitaker and Baxter were forwarded to these officers, and in response to a telephoned plea for help from the National Education office, local auxiliary members affiliated with A.A.U.W. sent telegrams to the Resolutions Committee of the A.A.U.W., at its biennial convention held the early part of April. We are most gratified to learn that the issue of compulsory health insurance has been placed on the national study agenda of A.A.U.W. for the first time. We feel that in our small way, we were helpful in the effort made to bring this to pass. We will continue to watch activities of this group and the Parent-Teacher Association, in the State and communities, and do everything possible to encourage action.

Philanthropic: The membership assisted both physically and financially in Red Cross, Community Chest, Cancer, Polio, Crippled Children and Tuberculosis drives. An entire room was completely furnished in the Gila County Hospital by the small auxiliary membership of 13 women. Yavapai, with a membership of 11 active and 12 associate members, has done a tremendous job in presenting the work of the Nurse's Loan Committee to the lay public, as well as donating generously to the above mentioned agencies, the Salvation Army and the purchasing of oxygen tents for the Community and County Hospitals in Prescott. Maricopa and Pima, the two larger counties, have participated in all of the drives above mentioned, as well as having donated generously to them. In addition, Maricopa Auxiliary furnished supplies and two volunteer workers each week to the Visiting Nurse Association and gave many hours to the County Chest X-ray campaign. Pima Auxiliary helped further the Adult Educational program of the American Cancer Society, to-

gether with the placing of sound film on the subject when and where requested.

Student Nurse Loan: This is our most ambitious public relations project. Applications are accepted from girls in the State who have the necessary grade and health qualifications. Contact is made through the high schools. This year 4 girls have been assisted. The fund is financed by auxiliary members and the members-at-large and will be self-sustaining in a five year period. This project has received state recognition from the nurse's associations, high school principals and lay organizations, and we believe it to be of inestimable public relations value to both the Auxiliary and the Arizona Medical Association.

Legislation: Auxiliary entered into an all-out campaign to see that doctors and their wives were registered so that there would be no slip-up at the time of local elections. When our 20th Legislature went into session, we were apprized of the bills in which our Association was interested, those it disapproved and those it sponsored. Copies of the bills were secured, a digest made and mimeographed and sent to all auxiliaries for distribution and discussion and also mailed to the members-at-large. National legislation was passed on to the county groups and the members urged to act individually when the occasion indicated.

Today's Health: Inasmuch as this is an authentic health magazine published by the American Medical Association, the Auxiliary considers its work in helping in the distribution, an opportunity to further health education. Subscriptions have been donated to schools and hospitals. We hope some day to encourage every doctor in the State to subscribe as it is excellent waiting room reading material. Our subscriptions increased by 75 this year. Yavapai Auxiliary was given National recognition in the contest with a listing in Group I—the first ten auxiliaries having the highest percentage per membership. We are also proud to mention that last year's Today's Health chairman, Mrs. George Enfield, received National recognition when an article written by her for the Arizona Medicine, was used in the Handbook for Today's Health printed this year.

Bulletin: One hundred forty Bulletin subscribers were purchased by members and members-at-large.

Historian: The year's activities have been

recorded in the State records, and the historian has submitted a complete State history as requested by the National Historian.

Publicity: Auxiliary articles were printed in Arizona Medicine each month, and special events were given fitting newspaper notices.

We are deeply grateful to the men of the State Association for their moral support and leadership as well as their financial support, for again this year we were given \$1000.00.

It was our honor and privilege to entertain the National President, Mrs. Herold, during our State meeting. The joy of her presence and the inspiration we received from her message, successfully completed a year of activity and accomplishments.

Respectfully submitted,

Mrs. Benjamin Herzberg, President
Woman's Auxiliary to the Arizona
Medical Association

PROPOSED PROGRAM 1951-52

At the Chicago Conference of Presidents and Presidents-elect last October, the "Healthy Living" discussion, led by Mrs. William M. Gambrell of Texas, impressed me very much. After studying the complete kit of information on this Health Education Program, I turned it over to the next year's state chairmen of Public Relations and Health Education for study and consideration. They feel it would be an excellent program for both committees to undertake in Arizona in 1951-52.

Since our Organization Chairman has not been elected, her plans can not be incorporated in this report, but the auxiliary board hopes that next year at least one new county auxiliary will be organized and the numbers of members-at-large increased.

The Publicity Committee will continue the news column in *Arizona Medicine* with some variance in subject matter. If the trial news letter being sent out this spring to all doctors' wives in the state proves successful, it may be repeated next year.

The *Bulletin* and *Today's Health* chairmen will start making plans soon to increase the sale of these publications. We hope for a banner year.

Last May the Nurses' Loan Committee set up qualifications and policies for girls requesting financial aid during their nurses' training. All

high school principals received duplicate letters, applicants were interviewed and loans given to four girls. One girl received a maximum loan of \$300.00; three girls received partial scholarships totalling \$300.00. The committee felt it was wiser to send letters to the principals in February this year, so applicants are being interviewed now for the second year loans in order that actual voting on the girls can take place at the state convention.

The board feels that the work accomplished by this committee has been gratifying and from a public relations standpoint, it has no equal. The Woman's Auxiliary has gained respect; the state Nurses' Association has become familiar with the project and the girls benefited; school principals have sent letters of congratulation; hospitals throughout the country have been watching this national program of the Auxiliary. We hope to keep the ball rolling until such time as the program becomes self-sustaining.

Having personally attended the Annual Conference in Chicago last fall, I can testify that paying the expenses of the President-elect is money well spent. It gives her inspiration, understanding and new ideas to bring back to her state auxiliary. I am sure the new President elect will feel that she, too, is gaining much when she attends the conference next fall.

Before closing this brief summary of a full program, I wish to say that I realize the tremendous responsibility I have assumed but appreciate the confidence the Medical Auxiliary has shown in electing me to this position. And to the doctors I pledge my loyalty and that of the Auxiliary. We shall stand ready at all times to serve the Arizona Medical Society.

In closing, I wish to say that the board has authorized me to request of the Arizona Medical Society \$1,000.00 to aid in carrying out the program of the Woman's Auxiliary for 1951-52.

We hope it will be possible to have this program approved before the post board meeting, May 1st, so if the Health Education Program is to be undertaken, the Public Relations and Health Committees can make their initial contacts with the schools before their closing date in May and this summer start the ground work for next winter.

Thanking you for all considerations, I am

Respectfully,

(Mrs. Royal W.) Brownie Rudolph,
President-elect



- HOSPITAL
BEDS
FRACTURE
BEDS



- WHEEL
CHAIRS
HOSPITAL
& PORTABLE



- INVALID
WALKERS
ADULT & CHILD SIZE
OXYGEN THERAPY SERVICE
8-3112 — Phones — 2-6181
Phoenix, Arizona



WAYLAND'S TWO STORES



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13 E. Monroe Street
Phone 4-4171

Wayland's McKinley Pharmacy
138 W. McKinley Street
Phone 4-7243

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2. Barborika, C. J.: Treatment by Diet, ed. 5, Philadelphia, J. B. Lippincott Company, 1948, pp. 338-347.

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